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ABSTRACT

As part of the Projects for International Education Research, information is provided on Norwegian education and recommendations for admissions and academic placement of Norwegian students studying in U.S. colleges and universities. The overview on Norwegian education includes information on the structure of the system, the 9-year basic school, programs for secondary-level study, technical and vocational schools and institutes, the folk high schools, and the universities, specialized colleges, and regional college system. Course descriptions and information on grading, examinations, certificates and degrees, and faculty are provided. In addition to comparing the educational system of Norway with the United States, the role of the National Council on the Evaluation of Foreign Educational Credentials is considered. Placement recommendations and information for 49 kinds of educational credentials are provided, including information on program entrance eligibility requirements and the length of the programs. Appendices include a glossary, a partial list of tertiary institutions in Norway, names of contacts in Norway who significantly assisted with the guide, descriptions of three offices that serve Norwegian students who study in foreign countries, and a list of members of the National Council on the Evaluation of Foreign Educational Credentials. (SW)

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A Guide to the Admission and Academic Placement of Norwegian Students in North American Colleges and Universities

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NORWAY

A Guide to the Admission and Academic Placement of Norwegian Students in North American Colleges and Universities

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Sponsored by Projects for International Education Research (PIER)—a joint committee of the American Association for Collegiate Registrars and Admissions Officers (AACRAO), and the National Association for Foreign Student Affairs (NAFSA).

College Entrance Examination Board
New York, 1985

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Preface

In late 1973 a group of Americans and Canadians visited the five Nordic countries (Denmark, Finland, Iceland, Norway, and Sweden) to gather information for the publication, *The Admission and Academic Placement of Students from Nordic Countries, A Workshop Report.* Following visits to each country, the government of Norway, a major contributor to that successful project, hosted the entire group for one week while the information was discussed and placement recommendations were formulated. At that time the Norwegian educational system was undergoing major reforms, and it soon became evident that several sections of the report would need to be updated to reflect the changes. In January 1984 we visited Norway for that purpose.

Norway is a dynamic country with an unusually well-educated population. One cannot visit Norway without sensing the influence that education, at all levels, has had on the social and economic attitudes of the people. When we asked why Norway, with only four million people, supports four major universities, 14 regional colleges that have been authorized to award first university degrees, several high-quality business and engineering colleges, and many more specialized higher-education institutions, all based on a free and very good 12-year elementary and secondary-school plan, we received an interesting reply. We were told, "Because we are a people with limited natural resources we must use our minds to maintain our comfortable way of life."

On first glance, the exhilarating beauty of the country might lead one to believe that Norway is indeed rich in resources. Although Norway is rich in oil and timber, only three percent of the land is cultivated, or arable, and growing seasons are very short. Nearly 60 percent of the land area is above the tree line. Thus, Norwegians "use their minds" and have become highly respected throughout the world for their skills in business, engineering, naval architecture, craftsmanship, shipping, tourism, and many other areas. They have achieved leadership in these fields because of their steadfast commitment to both academic and vocational education. Norway seems always to be engaged with the present and preparing for the future, but with a deep respect for and awareness of its traditions and history.

Included in Norway's commitment to the present and plans for the future is the encouragement of overseas studies for its young citizens. About 1,600 of the 4,500 Norwegians enrolled in foreign universities are in North America. Most are studying business or engineering. Gov-

ernment loans and grants support students who are abroad and special overseas service offices of the Association of Norwegian Students Abroad (ANSA) are also government funded.

Our 20-day assignment was made possible by a grant from the Norwegian Ministry of Cultural and Scientific Affairs. Funds for publishing this report have been provided by the College Board, with some assistance from the American Association of Collegiate Registrars and Admissions Officers (AACRAO), and the National Association for Foreign Student Affairs (NAFSA). More than 75 people assisted us during the various stages of our visit, and the names of those who made significant contributions to the project are listed in Appendix B. It is appropriate to mention a few, however, who deserve special expression of appreciation. They include Per Nyborg, Director General, Ministry of Cultural and Scientific Affairs of Norway, who was the primary coordinator for our visit, and his able colleague, Gudbrand Kvaal, who handled the logistics of much of our travels. Their organizational efforts were superb and they were very pleasant people with whom to work. Valuable reference materials were prepared and supplied to us by Inger Marie Bakken, formerly of ANSA's New York office. Further, the authors wish to acknowledge the significant editorial and content suggestions submitted by five members of the National Council on the Evaluation of Foreign Educational Credentials, the authority that examined this work and approved the placement recommendations. We should also like to recognize the work of our able assistants, Diane Miner in Ann Arbor, and Dawn Bauer in Traverse City, whose contributions to the preparation of this manuscript were considerable. Finally, we wish to thank Eva Tank-Nielsen, Student Adviser at the Norwegian Information Service in New York City, who made an invaluable contribution by checking our use of the Norwegian language, and Pat Wyatt, of the College Board, for her thoughtful and creative editorial skills in pulling together all the pieces from raw manuscript to final book.

This report is written to update two earlier publications that described Norwegian education and provided admissions and academic placement recommendations. Those reports were *Norway*, a World Education Series report (1971), AACRAO, Washington, D.C., Reidar Dittmann, author; and *The Admission and Academic Placement of Students from Nordic Countries: A Workshop Report*, AACRAO/NAFSA Joint Committee on Workshops (1974), NAFSA, Washington, D.C., Cliff Sjogren, editor. These publications offer insights into some characteristics of the Norwegian system both before and after the reforms of the 1970s.

The authors, of course, take full responsibility for any errors of omission. All interviews and meetings were conducted in English, and while it might be assumed that that medium would be a disadvantage for the Norwegians, there seemed to be no gaps in the information that could

be blamed on language problems. Also, we left all of our meetings with relevant printed information, mostly in English, which enabled us to fit all the pieces of data together.

Thank you, Norway, for being such a fine place to visit.

Cliff Sjogren
Director of Admissions, The University of Michigan, Ann Arbor

Lornie Kerr
Vice President for Student Affairs, Northwestern Michigan College, Traverse City

COUNTIES
TOWNS

OSLO
OSLO
AKERSHUS
ØSTFOLD
HALDEN
SARPSBORG
FREDRIKSTAD
MOSS
HEDMARK
HAMAR
KONGSVINGER
OPPLAND
LILLEHAMMER
GJØVIK
BUSKERUD
RINGERIKE
DRAMMEN
KONGSBERG
VESTFOLD
HOLMESTRAND
HORTEN
TØNSBERG
SANDEFJORD
LARVIK
STAVERN
TELEMARK
PORSGRUNN
SKIEN
NOTODDEN
AUST-AGDER
RISØR
ARENDAL
GRIMSTAD

VEST-AGDER
KRISTIANSAND
MANDAL
FARSUND
FLEKKEFJORD
ROGALAND
EGERSUND
SANDNES
STAVANGER
HAUGESUND
HORDALAND
BERGEN
SOGN OG FJORDANE
FLORØ
MØRE OG ROMSDAL
ÅLESUND
MOLDE
KRISTIANSUND
SØR-TRØNDELAG
TRONDHEIM
NORD-TRØNDELAG
STEINKJER
NAMSOS
NORDLAND
BODØ
NARVIK
TROMS
HARSTAD
TROMSØ
FINNMARK
HAMMERFEST
VARDØ
VADSØ
SVALBARD
LONGYEARBYEN

Source: *Norway Information*, Royal Norwegian Ministry of Foreign Affairs, Oslo 1, Norway, February 1981.

1.

An Introduction to Norwegian Education

For several decades the guiding educational policy of the Norwegian government has been to ensure that more and more people have access to opportunities for education. The Act of 1969 Concerning the Basic School provides for compulsory (basic) school attendance for nine years beginning when the child is seven years of age. Education is free at all levels in the public sector and, now, only a few nonpublic institutions exist. School materials are free in the basic school.

The government of Norway has encouraged, with some success, a significant level of cooperation between the educational community and the business and service sectors. The Act of 1974 Concerning the Upper-Secondary School, and subsequent amendments and related acts, have given equal status to theoretical and practical education. Vocational and general (academic) studies are offered at the same school and students enrolled in one field may elect courses from the other. In 1980, for the first time, the number of students in vocational training exceeded the number enrolled in the theoretical branches in the upper-secondary school. The government has declared that attendance in the three-year, upper-secondary school is the right of every Norwegian.

While the new reforms emphasize that students "should be given a suitable amount of general knowledge," schools must also "encourage tolerance and freedom of thought." Morality, and Christian thought and attitudes, are also stressed in the curriculum, particularly at the basic-school level.

The authority for nearly all basic and upper-secondary school education rests with the Ministry of Church and Education. A few secondary-level schools fall under the administration of the Ministry of Agriculture, but that authority is expected soon to be transferred to the Ministry of Church and Education. Among its many responsibilities, the Ministry of Church and Education develops guidelines for curriculum revisions, acts on entrance requirements, and determines teaching salaries and loads.

On secondary-school matters the Ministry is advised by the National Council for Upper-Secondary-School Education, a secretariat comprising 80 people with wide-ranging educational qualifications. Finally, each of Norway's 20 counties has a school board, which is responsible for making sure that local school officials for upper-secondary education comply with the laws that are concerned with educational matters.

Higher education in Norway falls under the jurisdiction of the Ministry of Cultural and Scientific Affairs. The two exceptions in the public sector are the College of Agriculture and the Veterinary College, both responsibilities of the Ministry of Agriculture. Universities in Norway have a long tradition of freedom in academic matters, although the Crown retains the right to arrange examinations and confer degrees. The highest authority at the University of Oslo is the Senate *(Det Akademiske Kollegium)*, consisting of the chancellor, vice chancellor, the deans of the faculties, and one elected representative each from the academic staff and the student population. Other higher-education institutions are similarly governed, except at the University of Tromsø, where students enjoy a much higher degree of representation.

Teacher education, also a responsibility of the Ministry of Cultural and Scientific Affairs, is influenced heavily by a special advisory group known as the National Council for Teacher Training. Adult education offered by the folk high schools is the responsibility of the Ministry of Church and Education, even though those schools are considered by Norwegians as postsecondary-level institutions.

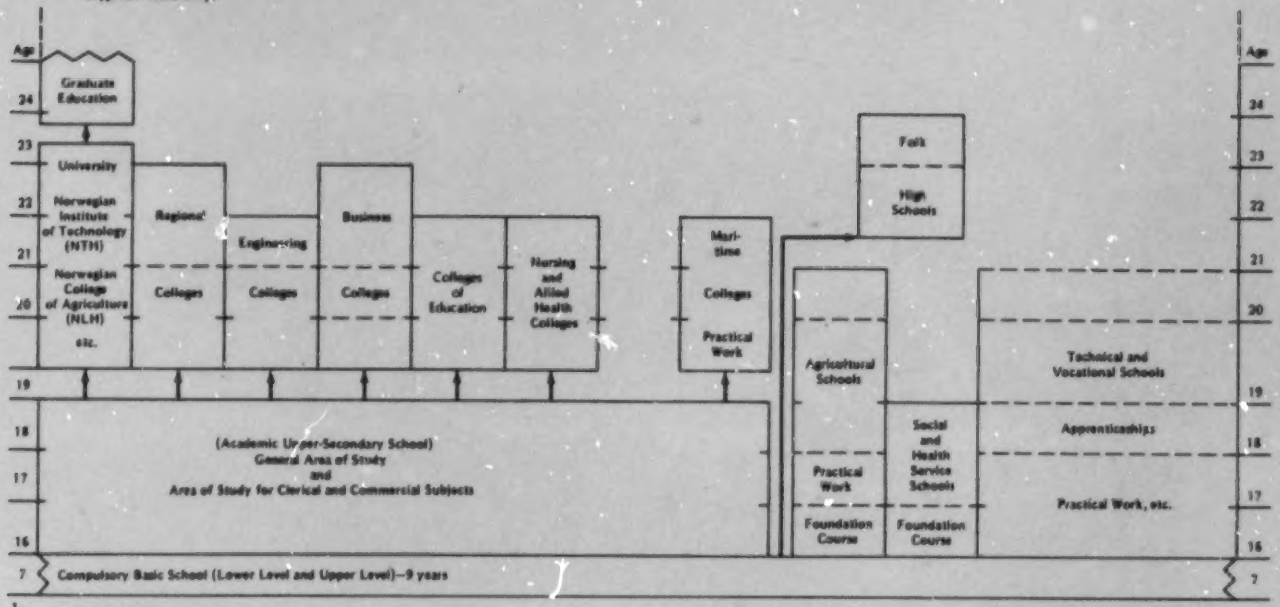
For higher education that is not provided by one of the four universities (plus the College of Agriculture, the Veterinary College, and some other specialized colleges), the Ministry of Cultural and Scientific Affairs appoints a college board for each of the 16 regions of the country. These boards determine the higher-educational needs and interests of their regions. The regional colleges are the anchors of this recent educational development.

In both technical and business education, the new reforms provide for greater flexibility than before. Students who opt for vocational training lines in the upper-secondary school may eventually be admitted to the university-level Norwegian Institute of Technology in Trondheim, or the Norwegian School of Economics and Business Administration in Bergen, after additional preparatory work is satisfactorily completed. Also, admission "points" are awarded for age and relevant work experience. This system provides a more personal approach to the admissions process than the former rigid examinations and inflexible secondary-school curriculums allowed.

The flexibility that characterizes the educational reforms has not resulted in a deterioration of academic quality. The best students continue to experience a rigorous academic program that has retained many of

the features of the *examen artium* (university matriculation examination). Now, however, capable students who were overlooked under the old plan have an opportunity to demonstrate their abilities and educational maturity and move back into higher-level technical and general academic studies. Norway has successfully democratized its educational system and Norwegians continue to be among the world leaders in the trades and the professions. Figure 1, which follows, shows the structure of the Norwegian educational system.

FIGURE 1. The Norwegian Educational System
(Typical Paths only)[1]



[1] See detailed charts in text.

2.

Nine-Year Basic School (9-Årig Grunnskole)

In Norway, education is compulsory for nine years and begins when the child is seven years old. Compulsory education has existed there since the middle of the nineteenth century. The Act of 1969 Concerning Basic School extended compulsory education from seven to nine years.

Basic school *(grunnskole)* is divided into a six-year lower, or junior, "stage," and a three-year, upper, or youth, "stage." (See Tables 1 and 2 on pages 6 and 7.) The curriculum is the same for all students at the junior stage, while students at the youth stage may elect from numerous options during the final two years. A teaching period in basic school is one 45-minute period per week for the 38-week school year. Thus, as noted in Table 1, a student in grade four studies English for two periods each week, or 76 periods during the year.

The study of English is compulsory and begins in grade four for two periods a week. In grades six through nine, students are required to study English for three periods a week. A second foreign language is a popular optional study in grades eight and nine. Most students elect German as their third language.

By law, class size at the basic-school level is normally limited to 30 students. If two or more levels (e.g., fourth- and fifth-year students) are taught together in the same classroom, however, there is "a very much lower limit for the maximum number of pupils" that can be enrolled. If all pupils at the school are taught together, each classroom enrollment must not exceed 12 students.

While school officials are required to follow a national standardized curriculum as described in Tables 1 and 2, the responsibility for ensuring that government education mandates are followed is assigned to a locally elected council. The council appoints a school board of between 7 and 35 members, depending on the size of the population served, to deal with general education matters. State financial support for local education at the basic level varies from 25 percent to 85 percent of the total costs, depending on the local area's financial condition.

TABLE 1. Allocation of Teaching Periods at the Junior Stage[1]

Subject	Grade						Total
	1	2	3	4	5	6	
Religious instruction	2	2	2	2	2	2	12
Norwegian/handwriting	5	5	5	4	5	5	29
Mathematics	3	3	4	4	3	3	20
English				2	2	3	7
Orientation subjects[2]	2	2	2	4	4	7	21
Music	1	1	1	2	2	1	8
Arts and handicraft	1	1	2	4	4	4	16
Physical education	1	1	2	2	2	2	10
	15	15	18	24	24	27	123
Local studies[2]	2	2	2				6
Social studies[2]				2	2	4	8
Nature study[2]				2	2	3	7

[1] The table shows the distribution of periods which are specifically allotted to fixed subjects (minimum 123).

Within the framework of the minimum number of teaching periods (129) the school has to allocate six hours not shown in this table to various subjects and activities. Within the framework, of the minimum of 123 shown in the table, periods can be taken from one year group and allocated to another. The total number of periods allocated to any subject over the six-year period must not be reduced.

[2] Local studies, social studies and nature study can either be combined into one subject or taught as three separate ones. Most of the teaching in the compulsory subject domestic science, including practical work, is to be covered in periods allotted to these subjects, but some periods allocated to other subjects, particularly handicraft, may also be used for domestic science.

In the case of schools with few classes the distribution of periods is normally based on the table referring to the senior year group in the class.

In the sixth year and above one weekly teaching period should be set aside for class council and pupils' council activities.

Source: Reprinted from *Education in Norway* (Oslo: Ministry of Church and Education, 1982).

TABLE 2. Allocation of Teaching Periods at the Youth Stage

Subject	Grade			Total
	7	8	9	
Religious instruction	2	2	2	6
Norwegian	4	4	4	12
Mathematics	4	4	3	11
English	3	3	3	9
Social Studies	3	3	3	9
Science	3	2 (3)[1]	3	8 (9)
Music	2	1 (0)	1 (0)	4 (2)
Arts and handicraft	3	2		5
Physical education	2	3	3	8
Domestic science	3			3
Options[2]		5	7 (8)	12 (13)
Class council/pupils' council activities	1	1	1	3
	30	30	30	90

[1] Municipalities which do not make music compulsory in the 8th and 9th grade use the number of periods in brackets.

[2] The second foreign language, which is an optional subject, is allotted up to 3 teaching periods in the 8th grade and up to 4 in the 9th grade.

In the 8th and 9th grade the following optional activities may be offered for between 1 and 5 periods per week: music, arts and handicraft, physical education, domestic science, secretarial studies, fisheries and maritime subjects, agriculture, reindeer husbandry, economics and consumer studies, traffic studies, driver's licence for light motorcycles and small boats, religious and philosophical studies, personal development, technology, media studies, drama, social work, participation in voluntary organisations, typing.

Source: Reprinted from *Education in Norway*, (Oslo: Ministry of Church and Education, 1982).

3.

Secondary-Level Education

Upon completion of the compulsory nine-year basic school at age 16, a student is entitled to study three additional years within one of the two main fields of the upper-secondary school. Those two fields are the academic field and the vocational field. The student leaving basic school may choose either field. A third option for the student is enrollment in a two-year foundation course that will allow a third and fourth year in either field. The second year of the two-year foundation course provides a student with additional instruction to prepare for the final two years of upper-secondary school. Students enrolled in one field are encouraged to elect courses from the other. Increasingly, both vocational and academic programs of the upper-secondary school are being offered in the same institution or in close geographic proximity, which allows for wider educational choices for all students. Students who complete one of the academic areas of study, either the general area of study or the area of study for clerical and commercial subjects, are eligible for admission to universities and other tertiary institutions in Norway, as are students who complete the final two years in an academic field after the two-year foundation course. Students who are at least 25 years of age and who present evidence of significant work experience are also eligible for admission to tertiary institutions.

The following outline summarizes the definitions and general organizational structure of the upper-secondary school.

The academic area of study comprises:

A. General area of study, within which there are four branches
   1. natural science
   2. social studies
   3. languages
   4. music

B. Clerical and commercial subjects area of study, within which there are two general branches that lead to five sub-branches in the final year.
   1. office and administration branch
   2. business and economics branch

The vocational field of study comprises:

A. Technical and industrial area of study

B. Aesthetic area of study
C. Fishing trade and maritime area of study
D. Physical education area of study
E. Domestic science area of study
F. Social services and health areas of study

3.1. Academic Upper-Secondary-School Programs

3.1.1. General Area of Study *(Studieretning for Allmenne Fag)*

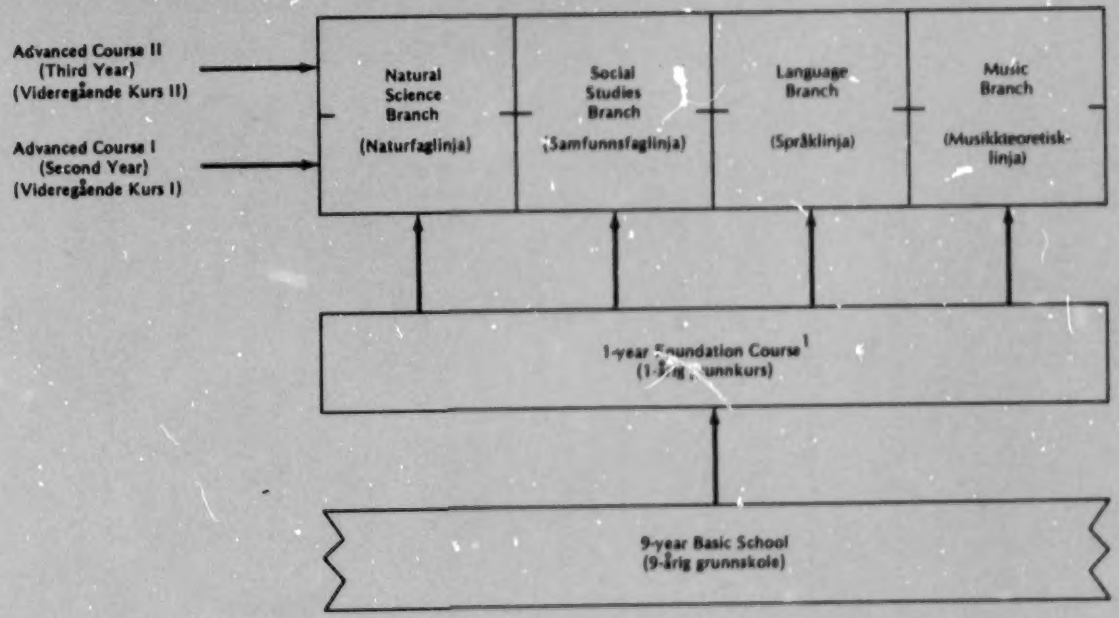
The general area of study closely resembles programs offered by the former *gymnas*, which prepared students for the *examen artium* (university matriculation examination), although students now have considerably more flexibility. The new plan began in 1976 and was fully implemented in 1983. Following a one- or possibly two-year foundation, or core, course, a student enrolls for two more years in one of the following four branches: *språklinja* (language), *samfunnsfaglinja* (social studies), *naturfaglinja* (natural science), or *musikkteoretisklinja* (music). According to a report of the National Council for Upper-Secondary Education (January 1983), the general area of study is designed to give students ". . . further skills and qualities required in all walks of life, such as independent reasoning, ability to gather information, a certain knowledge of history and natural sciences, and a certain command of two foreign languages." About 20 percent of the 16- to 19-year-old group in Norway is enrolled in one of the four branches of the general area of study.

All branches in the general area of study require a core curriculum consisting of Norwegian, religion, English, an additional language, social studies, mathematics, natural sciences, and physical education. Students are also able to elect optional courses both from within and outside their selected areas and branches. (See Figure 2, page 10.)

3.1.2. Clerical and Commercial Subjects Area of Study *(Studieretning for Handels-og Kontorfag)*

The area of study for clerical and commercial subjects gives a student legal access to universities and other tertiary institutions in Norway. This area of study also prepares a student for immediate employment in business, industry, and the public sector. After completing the foundation year (or years), a student elects to study either the business and economics branch, or the office and administration branch in the following year. After that, the student elects to study for one year either the branches of accounting, marketing, data and information processing, language and

FIGURE 2. Study Options in the General Area of Study (Studieretning for Allmenne Fag)



[1]The foundation course may be either one or two years.

public administration, or tourism. The clerical and commercial subjects area of study includes some foundation, or core, courses in Norwegian, English, and mathematics, but with fewer lectures and at a somewhat lower degree of intensity than is characteristic of the general area of study. (See Figure 3, page 12.)

3.1.3. Amount of Instruction

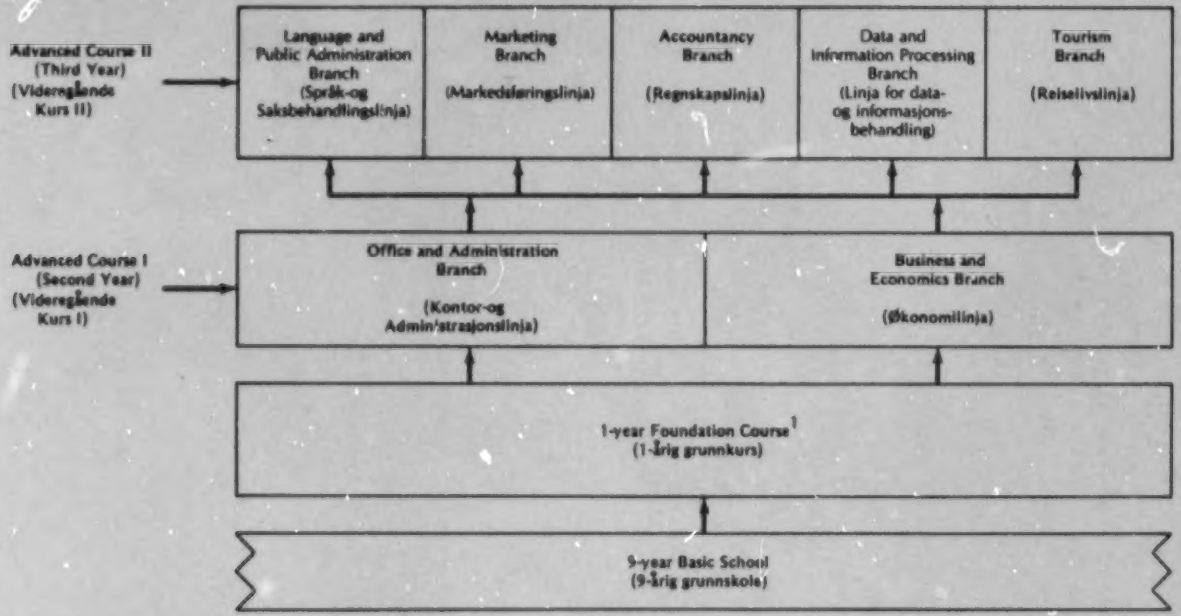
The Norwegian academic upper-secondary-school year consists of 190 days, or 38 five-day weeks. Each day consists of at least six 45-minute periods, although seven-period days are not uncommon. To complete the upper-secondary-school program in the general area of study, students need to accumulate at least 90 periods in those subjects during the three years, or an average of 30 periods each year. Therefore, students normally enroll in courses for all six periods each day (or 30 periods each week) to complete their programs in three years. At least 15 periods during the last two years must be in branch subjects, although most students exceed that minimum and may take as many as 25 or more periods in their branch. Core courses constitute 60 periods, or two thirds of the course work required for a school-leaving certificate.

3.1.4. Grading

The grading plan followed in upper-secondary schools incorporates grades assigned by the teacher for overall achievement in the class and grades earned on standardized examinations. Classroom grades are based on teacher assessment of academic qualities displayed by the student, which include results of internal tests. External examinations are prepared and corrected by a separate commission of examiners, usually experienced teachers. An additional commission is appointed to handle and investigate student complaints and appeals. While all students must sit for written examinations in the Norwegian language, other examinations are assigned randomly, and students usually sit for at least two additional examinations in the general area of study and four in the clerical and commercial subjects area of study. The exams for the study of clerical and commercial subjects are taken during each of the three years. A certain percentage of students in both areas of study are also administered oral examinations, during which a teacher asks the questions and an appointed examiner assesses the responses. Students are selected for oral examinations by a drawing.

Grades in the upper-secondary school range from six (high) to zero (low). A six is seldom achieved. A grade of five represents a high level of achievement. A four might be high average, while a three might be low average. A two is the minimum passing grade and is "given for fragmentary knowledge poorly expressed," according to a report of the

FIGURE 3. Study Options in the Clerical and Commercial Subjects Area of Study (Studieretning for Handels-og Kontorfag)



[1]The foundation course may be either one or two years.

National Council for Upper-Secondary Education (1983). A one or zero represents a failure in the subject.

Using these guidelines, the following suggested equivalents, which apply only to the upper-secondary school, may be used. (See Table 3.)

TABLE 3. Suggested Norwegian and United States Grade Equivalents

Norwegian Grade	Approximate Percentage Awarded*	Suggested U.S. Equivalent
6	2%	A+
5	15%	A
4	20–30%	B
3	20–30%	C
2	30–40%	D
1/0		F

* From a mimeographed report released in January 1984 by the Norwegian Ministry of Cultural and Scientific Affairs, entitled "Admission of Norwegian Students to European and North American Universities."

3.1.5. Certificate of Completion of the Upper-Secondary School

In 1983 the term *examen artium* was officially discontinued. Now, students who complete the three-year upper-secondary school are issued a *vitnemål* (certificate). The terminology is changed slightly from year to year and titles of the certificate for the general area of study differ somewhat from the certificate for the clerical and commercial subjects area of study. However, most academic upper-secondary-school completion certificates include a title similar to the following: *Grunnkurs og Videregående Kurs (tilsammen 3 år)*, meaning foundation and advanced courses—altogether three years; *Studieretning for Allmenne Fag*, meaning the general area of study; *Samfunnsfaglinja*, meaning social studies branch, or, *Studieretning for Handels-og Kontorfag*, meaning the clerical and commercial subjects area of study; and *Regnskapslinja*, meaning accountancy. (See examples of the certificates on pages 16 and 17.)

Grades are recorded both in written and numerical form. Examination grades are given only for national standardized examinations and are designated as *S* for *skriftlig*, meaning written; *M* for *muntlig*, meaning oral; *K* for *kombinert*, meaning combined; or *P* for *praktisk*, meaning practical.

The subjects recorded on the certificate are divided into three groups: core subjects *(fellesfag)*, branch subjects *(linjefag)*, and optional subjects *(valgfag)*. Prior to 1983, the term *examen artium* meant that the student had satisfactorily completed all course and examination requirements. Also, before 1983 the term *fullført* (completed), by itself, did not necessarily mean that all requirements for the certificate had been satisfied.

Since 1983, however, *fullført* certifies that the requirements have been satisfied if the term *bestått* (passed) appears on the certificate.

Tables 4 and 5 that follow display the required foundation, or core, courses and the subject distribution within the three major branches of the general area of study.

TABLE 4. Foundation, or Core, Courses for the General Area of Study

Subjects	Periods Per Week			
	1st Year	2nd Year	3rd Year	Total
Norwegian	4	5	5	14
Religion	—	2	1	3
A- Language (English)	4	3	—	7
B- or C- Language[1]	4	3	—	7
Social Studies (history, geography, etc.)	3	3	5	11
Natural Sciences (chemistry, biology, physics)	5	—	—	5
Mathematics	5	—	—	5
Physical Education	3	2	3	8
Total core subjects	28	18	14	60
Branch and optional subjects	2	12	16	30
Total periods (at least)	30	30	30	90

Note: Some schools offer up to 35 periods per week, which gives students additional options including aesthetic and practical subjects.

[1] B- Language is the language that the pupil has studied in the basic school in addition to English. C-Language is the language that the pupil begins to study in the upper-secondary school.

Document 1, on page 16, is an example of an upper-secondary school-leaving certificate. Henrik Dal completed his studies in the foundation and advanced courses in the social studies branch of the general area of study in 1982. Document 2, on page 17, is an example of an unmarked certificate for the social studies branch translated into English. Dal satisfied his 60-period core-course requirements with mostly "fours" and "fives" and exceeded the 15-period branch-course minimum requirement by accumulating 23 periods in social studies. He elected nine periods of optional courses (French, English, and physical education) for a grand total of 92 periods, or two periods over the minimum requirement. Except for the examination in Norwegian language, Dal's standardized examination results were equal to or better than his classroom overall achievement grades. Four of his examinations were written and two were presented orally.

To evaluate the quality of Dal's record, a mathematical computation must be made. First, however, examination results should be averaged with overall achievement marks before the computation is made. Thus,

TABLE 5. Course Distribution of Branch Subjects for the General Area of Study (Typical Pattern)

	1st Year	2nd Year	3rd Year
*Natural Science Branch**			
Physics	—	5	5
Chemistry	—	5	5
Biology	—	3	5
Mathematics	—	5	5
English	—	—	3
*Social Studies Branch**			
Social Sciences	—	5	5
Economics	—	5	8
Business Economics	—	5	8
Law	—	2	2
History	—	2	—
Mathematics	—	2	5
English	—	—	5
*Language Branch**			
Linguistics	—	3	—
A- Language (English)	—	3	5
B- or C- Language	—	2	5
C Language	—	5	5
Latin	—	8	4
Old Norwegian/Icelandic	—	3	5

* Students will generally elect between 15 and 30 periods from a particular branch and may elect optional courses from another branch. At least 15 hours, however, must be taken within the selected branch.

Dal's grade average in *naturfag* (natural sciences) is a 4.5 multiplied by the number of periods (five), which total 22.5 points for that course. The total number of quality points earned by Dal was 353, divided by 92 periods, which yields a quality point index of 3.8. (Note: Because the certificate summarizes the number of periods of the three language courses, some estimates need to be made when computing quality points for the core course in Norwegian.) His average in his branch, which was social studies, was 3.4, while he averaged 4.0 in his core subjects.

Admission to selective, higher-educational faculties in Norway is influenced heavily by the averages earned on the certificate. Previously the certificate itself (i.e., the *examen artium*) gave evidence that a satisfactory standard had been reached. Now students are judged by a combination of academic factors, including grades earned, internal and external examinations, and the nature and content of their coursework.

Table 6 on page 18 displays a sample curriculum for the clerical and commercial subjects area of study. In this sample the student elected the

DOCUMENT 1. Upper-Secondary-School Certificate (in Norwegian)

VITNEMÅL

Henrik Dal
Navn

Født			Personnummer
Dag	Måned	År	
09	06	63	331 54

har i 19 82 fullført GRUNNKURS OG VIDEREGÅENDE KURS (til sammen 3 år)
I STUDIERETNING FOR ALLMENNE FAG
SAMFUNNSFAGLINJA

og har fått følgende vurdering:

	Utgjør 1. år	2. år	3. år	Sum	Fag	Standpunktkarakter		Eksamenskarakter		Prøvefarm*	År	Merknader
Felles allmenne fag 60 t					Hovedmål (bokmål/nynorsk)	4	fire	2	to	3		
	4	5	5	14	Sidemål (nynorsk/bokmål)	3	tre	3	tre	3		
					Norsk muntlig	5	fem	5		M		
	0	1	3	3	Religion	4	fire					
	4	3	0	7	Engelsk	3	tre					
	4	1	0	7	Tysk	4	fire					
	3	0	0	3	Samf.fag I (Geografi)	5	fem					
	0	3	0	3	Samf.fag II (Hi./Samf.k.)	5	fem					
	0	0	5	5	Samf.fag III (Hi./Samf.k.)	4	fire					
	5	0	0	5	Matematikk	4	fire					
	5	0	0	5	Naturfag (Kj./Bi./Fy.)	4	fire	5	fem	M		
	3	2	3	8	Fysisk fostring	5	fem					
Linje 32 t	0	5	0	5	Samfunnskunnskap							
	0	0	5	5	Samfunnskunnskap							
	0	3	0	3	Sosialøkonomi ✓	4	fire					
	0	0	2	2	Sosialøkonomi ✓	3	tre	4	fire	3		
	0	5	0	5	Bedriftsøkonomi ✓	3	tre					
	0	0	8	8	Bedriftsøkonomi ✓	3	tre	3	tre	3		
				4	Rettslære							
	0				Historie							
	0	5	0	5	Matematikk ✓	4	fire					
	0	0			Matematikk							
Valgfag 9 t	4	0	0	4	Fransk C	4	fire					
	0	3	0	3	Engelsk	3	tre					
	0	0	2	2	Kroppsøving	5	fem					

Sum timetall 92 t. Fravær 3. år 4 dager 7 enkelttimer

Med hensyn til kompetanse, herunder fradrag i læretid, henvises det til gjeldende bestemmelser.

Mellomåsa videregående skole — Mellomåsa den 19. juni 1982
Skole

N. N. — H. H.
Rektor

EXAMPLE

29 BEST COPY AVAILABLE

DOCUMENT 2. Upper-Secondary-School Certificate (in English)

CERTIFICATE

Date of birth			Personal reg.number
Day	Month	Year	

Name of examinee

has in 19 ___ completed the *Foundation course and *Advanced courses (altogether 3 years) in the General Area of study
Social studies Branch

scoring the following grades:

Weekly periods 1.year	2.	3.	Sum	Subject	Overall achievement	Examinations	Type	Year	Comments
Common core subjects — p.									
				Norwegian (main)					
4	5	5	14	Norwegian (secondary)					
				Norwegian oral					
0	3(1)	1(2)	3	Religious instruct.					
4	3	0	7	English					
4	3	0	7	B- or C-language					
3	0	0	3	Social studies I (Geography)					
0	3	0	3	Social studies II (Hist./Soc.science)					
0	0	5	5	Social studies III (Hist./Soc.science)					
3	0	0	3	Mathematics					
3	0	0	3	Nature) science (Chem./Biol./Phys.)					
3	2	3	8	Physical Education					
Branch subjects — p.									
0	3	0	3	Social science					
0	0	5	5	Social science					
0	3	0	3	Economics					
0	0			Economics					
0	5	0	5	Business economics					
0	0	5	5	Business economics					
			4	Law					
0				History					
0	3	0	3	Mathematics					
0	0			Mathematics					
Optional subjects — p.									

EXAMPLE

EXAMPLE

Absence 3rd year ___ days ___ teaching periods
(From 1983 on, absence will be recorded for each year)

Total number of periods taught per week ___ p.

Name of examining school

Orden (from 1983) (Order & conduct)

Date 19___

Signature of Principal

* Until 1983 the term "Examen artium" was used for the 3 year course.

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business and economics branch for the second year (advanced course I) and the accountancy branch for the final year (advanced course II).

TABLE 6. A Sample Curriculum: The Clerical and Commercial Subjects Area of Study

Courses and Course Divisions	Number of Periods 1st Year	2nd Year	3rd Year
Foundation (core) Courses			
Norwegian language	3	4	4
English language		3	3
Organization theory			3
Economics			3
Physical education	2	2	2
Branch Subjects			
Bookkeeping/accountancy	4		
Mathematics	3		
Society and industries	3		
Correspondence and documents	2		
Typing	4		
English	3		
Optional branch subject (accounting)	5		
Law		2	
Economics		2	
Business economics		5	
Optional branch subjects (selected from data processing, marketing, advertising, mathematics and statistics, and accounting)		14	
Tax legislation			3
Business economics			6
Financial calculations			5
Optional Subjects			
German	3		2
Totals	32	32	31

3.1.6. Course Descriptions

Following are listed some of the topics covered in the core and branch courses in biology, chemistry, physics, and mathematics of the general area of study. Comparisons of these topics with the College Board's Advanced Placement (AP) Program course descriptions may help the evaluator determine placement levels and, if appropriate, the nature and amount of credit to be awarded. The topics listed are drawn from two publications of the National Council for Upper-Secondary Education (January 1983) that describe core and branch subjects in the general area

of study. The Act of 1974 Concerning the Upper-Secondary School (section five) states that "The Ministry shall lay down the range of subjects for the courses . . . and determine guidelines for syllabuses." Although there is a provision in the act for some departure from the standardized curriculum, most schools include these topics in their course offerings.

3.1.6.1. Biology

Core course in natural science includes cell structure, function, respiration, and division; Mendel's laws of heredity, genetics; carbon and nitrogen cycles; ecological systems; environment.

Branch courses in biology include growth and cellular differentiation; taxonomy (each taxon treated with a view to morphology, anatomy, and physiology), propagation, growth and cellular differentiation, evolutionary theory; cytology—mutations, protein synthesis, chemistry of genes; physiology—transport of matter, enzymes, photosynthesis, cellular respiration; hormones, nervous system, sensory organs, endocrinology, blood; ecological systems and succession; some emphasis on the biochemical context; applied and theoretical zoology and botany.

3.1.6.2. Chemistry

Core course in natural science includes atomic chemistry, isotopes, light emission and absorption, mass; ions and molecules—ionic and covalent bonding, octet rule, molecular and formula mass; gases—Avogadro's law, oxidation and reduction, acids and bases, thermochemistry, and organic and inorganic chemistry.

Branch courses in chemistry include extensive treatment of atoms and bonds, electronegativity, ionization energy, polarity and dipoles, aggregate states; quantitative and energy relations by chemical reactions; rate of reaction and catalysis; chemical equilibrium, pH concept, pH calculation, pH determination, protolytic equilibrium in water solutions, law of mass actions; oxidation and reduction; organic chemistry—hydrocarbons, carbohydrates, alcohols, aldehydes, ketones, amino acids, and proteins; inorganic chemistry—basic metallic and nonmetallic elements and their compounds.

3.1.6.3. Physics

Core course in natural science includes mechanics—basic concepts and linear movement (speed, acceleration, force, work, energy, effect); thermophysics—aggregate states, inner energy, temperature, heat; electricity—charge, field, current, energy and effect).

Branch courses in physics include mechanics—laws of movement, friction, momentum, law of gravitation, pressure in liquids and gases; thermophysics—temperature, expansion, heat capacity of liquids and solid matter, phase exchange, heat of fusion, kinetic theory of gases,

isothermal and adiabatic processes; electricity—fundamentals of capacitance, current, Ohm's law, fundamentals of emf, coupling of elements and resistances; electromagnetism—magnetic field, induction, alternating current, electromagnetic waves; waves—harmonious oscillations, reflections, interference, physical optics, resonance; Bohr's atom model, quantum theory, Planck's constant, energy levels and transitions, radioactivity, fission, introduction to relativity theory. Optional subjects may include statics, rotation, osmosis, second law of thermodynamics, electrolysis, ferromagnetism acoustics, nuclear energy, astrophysics—pulsars, quasars, cosmological theories; elements of laser theory.

It should be noted that the physics courses listed above are included in the Syllabus A option of the curriculum. Students may also opt for Syllabus B, which closely resembles the syllabus for science in the former grammar school system, which led to the *examen artium*.

3.1.6.4. Mathematics

(Norwegian schools follow an integrative approach to mathematics instruction. Thus it is not possible to separate the number of periods of instruction allocated to algebra, geometry, calculus, etc.)

Core course in mathematics includes first-order equations with two unknowns, exponentials, intervals, square roots; functions—definition sets and value sets, coordinate system, functions represented by $y = ax + b$ and $y = ax + b/cx + d$, horizontal asymptotes, quadratic equations, factorials, proportionality and inverse proportionality, concepts from logic and set theory [used when naturally applicable]. Optional topics include proofs and counter-proofs, absolute values, graphs of first-order equations with two unknowns, division of polynomials, factorizing of linear factors, numbers written as exponentials with base 10, an introduction to the derivative, trigonometry, and vector algebra.

Branch courses in mathematics include (algebra and functions—rational functions, limit value, derivatives, tangent, relations between differentiability and continuity, monotonic functions, higher-order derivatives (points where the second order equals zero) definite and indefinite integrals; vector algebra—concept of a vector, ortonomal coordinates, scalar products expressed by cosine and by the coordinates of the vectors; trigonometry—angles measured in radians, the sine proportion, the cosine proposition, the area of a triangle $1/2ab \sin C$; geometry—normal vector to a line, parametric expression, volume calculation by means of integrals, rectangular parallel epipeds, pyramids and solids of revolution; functions and algebra—the derivative of trigonometric functions, trigonometric equations, especially $a \cos x + b \sin x = c$ and $\sin nx = \cos mx$, the inverse of a function, logarithmic functions, general exponential functions to the base e, derivatives of logarithmic functions and expo-

nential functions, differentials (use of the first-order derivative to find approximate values for functional values), methods of integration, integration by parts and by substitution, partitions of fractions with first-order denominator, sequences, convergence of sequences, proof of induction, convergence and divergence of series with emphasis on geometric series. Optional subjects may include electronic data processing, differential equations, mathematical logic, descriptive geometry, probability calculus, progressions, complex numbers, matrices and determinants, theory of conic sections, and theory of relativity.

It should be noted that the mathematics courses listed above are required and optional courses for students enrolled in the natural sciences branch of the general area of study. Students enrolled in the social studies branch will follow a slightly different pattern with a stronger emphasis on statistical mathematics.

3.2. Other Upper-Secondary-School Programs

The following areas of study in the vocational field are covered by The Act of 1974 Concerning the Upper-Secondary School:

- Technical and industrial
- Aesthetic
- Fishing trade and maritime
- Physical education
- Domestic science
- Social services and health

Each of these areas of study is divided into branches that follow a two-year foundation course. Most programs include relevant practical work along with classroom instruction as a requirement for completion of the secondary-school program. Thus, a student's secondary-school education in a vocational field is spread over a period of four to six, or more, years. Also, it is not uncommon for these students to elect several courses from the general area of study or the clerical and commercial subjects area of study. Selection of some courses from the academic field of study will give the vocational students more options for future tertiary education.

Upon completion of one of the programs listed above, most students begin their careers, although some enter advanced technical-vocational training and education. Students who do not complete either the general area of study or the clerical and commercial subjects area of study need

additional preparatory academic work if they wish to enroll in either college- or university-level studies. Frequently, students who are 25 years of age or older enroll in special courses in order to qualify for admission to a tertiary academic or technical program.

Schools that provide secondary-level vocational programs enroll large numbers of students: They are the technical-vocational schools and the social services and health schools. The technical-vocational programs are explained in Chapter 4. The social services and health program prepares students for careers as auxiliary nurses, teachers' assistants (or kindergarten assistants), food-service workers, dental assistants, cosmetologists, pharmacy assistants, and medical assistants. The one-year foundation course that follows basic school *(grunnskole)* consists of required coursework in Norwegian language, and physical education, and electives in mathematics, English, social science, and other subjects. During the second-year advanced course, students are enrolled primarily in vocational studies. The third year is also devoted to vocational studies, but some students elect core academic courses if they develop an interest in continuing their education at a higher level.

An example of a vocational school with a significant, practical-work requirement is the maritime school of the upper-secondary-school plan. After the foundation course, which includes instruction in marine-related technical subjects, the student must complete one year in industrial practice in a maritime activity that might include shipboard experience. The following two years of instruction are heavily oriented toward maritime subjects. Practical, rather than theoretical, mathematics is studied. Students may choose their branch studies from four options and may study the occupations of a mechanic, a navigation officer, a marine-engineer officer, or an electrician. The last three options lead to similar higher-level programs in a maritime college. The electrician option is reported to be the most rigorous of the four curriculums.

3.3. Secondary-Level Agricultural Education

The Ministry of Agriculture is responsible for secondary-level training in agricultural subjects. Nearly 5,000 students are enrolled in the 57 schools, of which 36 offer general agriculture. There are nine forestry schools, seven horticultural schools, three schools for food technology, and two schools that specialize in farm technology. Plans are currently under way to transfer all secondary-level training in agriculture to the Ministry of Church and Education in 1985.

After the nine-year basic school *(grunnskole)*, students enter a one-year course, which is similar in content to the first-year foundation course

of the upper-secondary school. Students then enter a practical-work phase, which varies from six months to several years, and may include military service. Thus, most students are 21 years of age or older when they return to the classroom for the one-year, middle-level *(agronom)* course, which includes coursework in biology, chemistry, physics, Norwegian, sociology, and physical education, in addition to numerous agricultural courses. After an additional year of practical training, the student once more returns for the one-year, higher-secondary program or technician course in either agriculture, forestry, or horticulture. This final, or third, year of classroom instruction consists of coursework in agriculture administration, commerce, or farm management.

Completion of the secondary-school-level program in agriculture does not, by itself, qualify a student for entrance into the highly selective *Norges Landbrukshøgskole* (Norwegian College of Agriculture), or NLH, at Ås. To be admitted to NLH, a student must either complete the general area of study of the upper-secondary school, sit for competency examinations, enroll for further preparatory studies in mathematics and science, achieve admission points through additional practical work and age, or satisfy the admission standards with some combination of the above.

3.4. Secondary Education in Norway and the United States: A Comparison

Norwegian students enter the nine-year basic, or primary, school at age seven and are at least 19 years old when they complete upper-secondary school. While the curriculum of the first six years in Norwegian basic schools is similar to that offered in an American elementary school, the curriculum of the final three years, particularly in foreign languages, is generally more rigorous and advanced than that of junior high schools in the United States. Each period of the day, beginning in basic school and continuing through secondary school, is assigned either to classroom work or physical education.

The curriculum of the general area of study in the Norwegian upper-secondary school is also more academically demanding than that of the tenth through twelfth grades of the typical high school in the United States. As described earlier in this chapter, Norwegian upper-secondary-school students attend academic classes, including physical education, for at least 30 periods each week for 38 weeks a year. It can be assumed that a typical academic program followed by a student in the United States consists of 13.5 academic units during the final three years of high school (based on an average of slightly more than 16 academic units for

four years.)[1] Because the average school year in the United States consists of 180 days, the total number of classroom contacts is 2,430 (180 days × 3 years × 4.5 academic units per year). Norwegian students spend six periods each day for 190 days each of three years, giving them a total of 3,420 classroom contacts. Adjusting that figure for the eight-period physical-education core requirement (8 × 38) results in a total of 3,116 periods, or 28 percent more classroom contacts than would be experienced by a typical American student in a three-year time span. Placed in another perspective, the 686-period differential in favor of the Norwegian student represents about 85 percent of the number of periods required for a full year in the United States system, which averages 810 contacts each year.

A further comparison of the two plans reveals some significant differences within specific areas of study. For example, a typical American student who elects chemistry will have 180 classroom contacts, while a Norwegian student in the natural sciences branch will have as many as 380 classroom contacts in chemistry. The Norwegian foundation (first-year) course of natural science includes two periods a week of chemistry. Students who elect chemistry in the natural sciences branch take three periods of chemistry a week during the second year (advanced course I), and five weekly periods during the third year (advanced course II), for a total of 380 periods. Even American students taking the College Board's Advanced Placement (AP) Program examinations who score well enough to receive college freshman-level credit rarely exceed 360 formal classroom contacts.

Finally, Norwegian students typically complete upper-secondary school at the age of 19, and are thus a year or two older than their American counterparts. It might be assumed, therefore, that the added maturity benefits the serious Norwegian student and contributes to a somewhat more enriched educational experience.

3.5. An Editorial Opinion: Awarding Credit for Secondary-School Coursework

The placement recommendations (pages 60–71) were approved by the National Council on the Evaluation of Foreign Educational Credentials. The Council, following the precedent of numerous recommendations it has prepared for studies in other countries, voted to continue the practice

[1] This assumption is supported by a recent College Board report, *Profiles, College-Bound Seniors, 1983*, which reveals that the average student in the United States who took the Scholastic Aptitude Test (SAT) completed 16.32 academic units during a four-year high school program.

of recommending transfer credit only for educational levels at which certificates are awarded that represent a specific standard of achievement. Such certificates are usually awarded on the basis of examination results, and the Council noted that in 1981 Norway abolished its school-leaving certificate *(examen artium)*. The Council was of the opinion that the level and intensity of a strong college-preparatory curriculum in the United States is comparable to the academic standards of instruction in the Norwegian upper-secondary school, and the members concluded that credit should not be automatically granted for the Norwegian upper-secondary school certificate.

The authors feel, however, that under certain circumstances transfer credit for the certificate of completion of the upper-secondary school may be justified. Students who complete the general area of study with at least a 4.0 average are among the top 10 percent of their age group in their preparation for further academic study. An average of 5.0 would place the Norwegian student among the top 3.5 percent of the age group (see relevant discussion in this chapter). A similar percentage of high school seniors in the United States, reported by the College Board to be approximately 3.7 percent (approximately 2.8 percent of the United States age group), will take the College Board's Advanced Placement (AP) Program examinations, and most will receive college credit ranging from 3 to 30, and sometimes more, semester-hours credit for their scores. Therefore, it is the opinion of the authors that the best Norwegian students completing the general area of study will compare favorably with the best students graduating from United States schools with AP credit. Thus, up to one year's credit, which could be validated by departmental interviews or examinations, might be awarded for branch subjects in which at least a 5.0 average is achieved.

4. Technical and Vocational Education (all levels)

Technical and vocational education is provided at four general levels beyond basic school *(grunnskole)*. They are:

1. Vocational-secondary schools *(yrkesskoler)*
2. Technical-vocational schools *(tekniske fagskoler)*
3. Colleges of engineering *(ingeniørhøgskoler)* and regional colleges *(distriktshøgskoler)* (Regional colleges are described in Chapter 6.)
4. Norwegian Institute of Technology, or NTH, of the University of Trondheim *(Norges tekniske høgskole)*

The vocational schools and the technical-vocational schools are considered secondary schools, while the colleges of engineering, the regional colleges, and the Norwegian Institute of Technology are all considered tertiary institutions. Access to one of the tertiary-level programs usually requires a certificate of completion *(vitnemål)* from an academic area of study of the upper-secondary school, although vocational students who have enrolled in additional preparatory studies may qualify for admission.

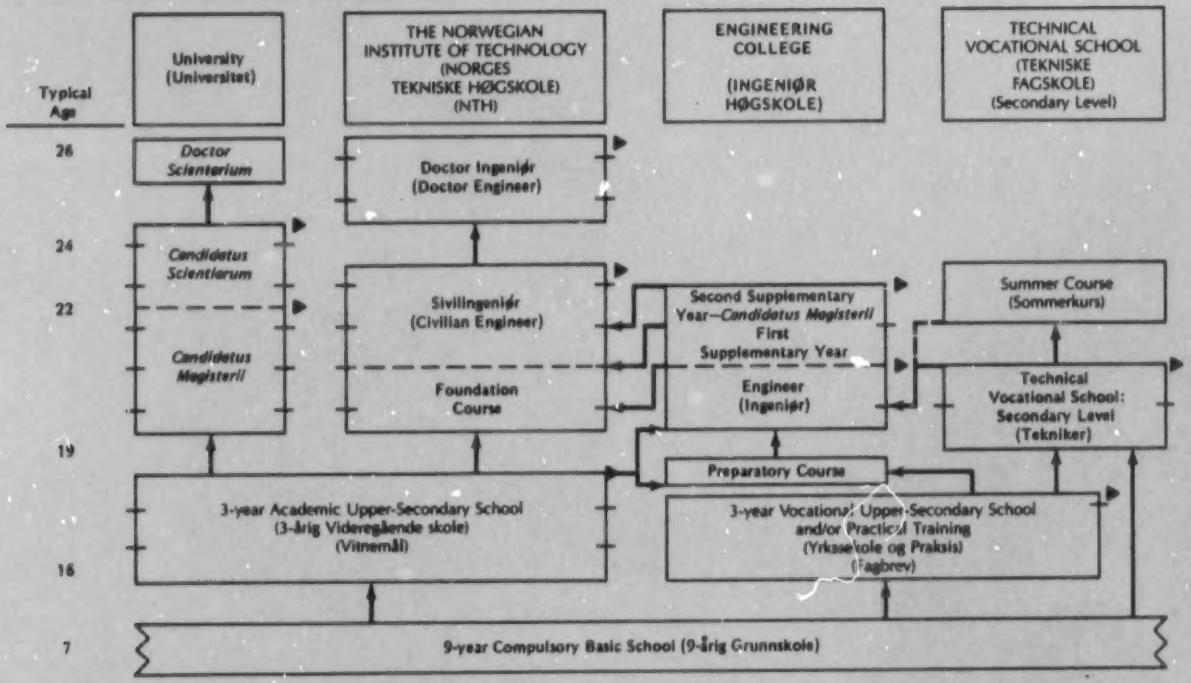
Figure 4, adapted from an unpublished, mimeographed report from the Norges Tekniske Høgskole (NTH), prepared in 1984, displays the options available to students in technical and vocational areas of study.

4.1. Vocational-Secondary Schools (Yrkesskoler)

After the nine-year, compulsory basic school, students may enroll for a three- or four-year course that leads to a craftsman's diploma *(fagbrev)*.

Several options are available to students in the technical and vocational areas, but the programs place only a minor emphasis on traditional academic subjects. Some students who complete the *fagbrev*, generally

FIGURE 4. Technical Education in Norway (Typical Paths)



Adapted from a mimeographed report from the Norges Tekniske Høgskole (NTH), 1984.

those who are 25 years of age or older, may enroll in the technical-vocational schools, or even colleges of engineering, after preparatory work in mathematics and science. (See Chapter 3 for further discussion on secondary-level vocational programs.)

4.2. Technical-Vocational Schools (Tekniske Fagskoler)

After completion of basic school and two or more years of relevant practical experience, sometimes in combination with vocational-school training, a student may be admitted to a technical-vocational school. These are secondary-level institutions, and most students are at least 20 years of age when admitted. The two-year program is primarily theoretical, although extensive laboratory experience is included in the curriculum. Students completing the course are awarded technician *(tekniker)* diplomas.

Required courses include mathematics, Norwegian, English, social science, business-related courses, and computer training. Optional courses in additional languages and in other areas are available, but the offerings vary by school.

Approximately 1,800 students are enrolled in the 35 technical-vocational schools throughout the country. Programs offered include technical training in mechanics, electronics, chemistry, house building, general industry, and many others.

Completion of the technical-vocational school program qualifies a student for entry into the second year of a college of engineering, although additional preparation in science and mathematics is often required. With additional summer courses in mathematics a student is legally eligible for admission to the *Norges Teknisk Høgskole* (Norwegian Institute of Technology) in Trondheim. However, because of severe competition for places at Trondheim, few applicants from technical-vocational schools are admitted.

4.3. Colleges of Engineering (Ingeniøhøgskoler)

There are 14 public colleges of engineering in Norway. Most offer a two-year program leading to the degree, *ingeniør.* Plans are under way to extend the period of study of engineering to a three and, eventually, four years. Two of the engineering colleges are affiliated with regional colleges *(distriktshøgskoler)* at Agder and Rogaland, and now offer three-year engineering programs. Also, the Oslo *Teniske Maritime Skole* (College of Technical Maritime Studies) is considered an engineering college.

A private engineering college, *Norsk Korrespondanse Institutt,* (NKI), offers courses for the first part of its program at 15 locations in Norway, with final courses available only at colleges in Oslo, Bergen, and Trondheim.

The normal qualification for admission to the colleges of engineering is the cerfiticate of completion *(vitnemål)* of the general area of study in the upper-secondary school in the natural science branch. However, students may gain admission by following another branch in the general area of study, or even in the clerical and commercial subjects area of study if required courses in mathematics and science have been successfully completed. Also, students who complete the technical-vocational school *(teknisk fagskole)* diploma program qualify for admission to the colleges of engineering at the second-year level. Finally, older students with minimal academic qualifications combined with relevant work experience may be admitted to a college of engineering after a preparatory course at an engineering college *(forkurset ved ingeniørhøgskolene).*

Most of the colleges of engineering offer degrees in chemical, civil, computer, electrical, and mechanical engineering. Rogaland *Distriktshøgskole* (Rogaland Regional College), in Stavanger, offers petroleum engineering, and Agder *Distrikhøgskole* (Agder Regional College), in Kristiansand, offers a three-year program that combines mechanical engineering and business administration.

In January 1981, the Norwegian government authorized the colleges of engineering to award the *canditatus magisterii (cand.mag.),* the first, or lower, university degree. *Cand.mag.* degrees require four years of study, or 80 credits. Generally, an academic year in Norway yields 20 credits. As stated earlier, two regional colleges now offer three-year programs in engineering. Currently it is planned that these and several other regional colleges will offer the full *cand.mag.* in a few years.

Students with the two-year *ingeniør* degree may enter the second year of the foundation course of the *sivilingeniør* program at the *Norges Tekniske Høgskole* (Norwegian Institute of Technology) at Trondheim, or, with an additional preparatory year, they may enter the specialized course that is offered to third-year students. (Figure 4, earlier in this chapter, illustrates this situation.)

The level and content of the mathematics and science courses at the colleges of engineering correspond to the level and content found in typical undergraduate engineering programs in the United States, primarily because of the student's intensive upper-secondary general area of study program. For example, first-year mathematics courses at a Norwegian college of engineering include the following topics: moment of inertia, integration of parts, polar coordinates, length of a plane curve,

Simpson's rule, indeterminate forms, expansions of functions in series, some first-order differential equations, inverse trigonometric functions with differentiations, curvature, parametric equations, Newton's method, and some complex numbers.

For students who do not complete the natural sciences branch of the upper-secondary school, a preparatory year provides an opportunity to correct the deficiencies.

Document 3 is an example of a certificate of completion (with English translation) from a college of engineering *(vitnemål fra Telemark ingeniørhøgskole)*.

4.4. *Norges Tekniske Høgskole* (Norwegian Institute of Technology)

University programs in engineering are now offered only at *Norges Tekniske Høgskole* (NTH), founded in Trondheim in 1910 and now part of the University of Trondheim. The first degree is the *sivilingeniør* (civilian engineer), which is awarded after four-and-one-half years of study beyond secondary school. The term *sivilingeniør* should not be translated as civil engineer. *Sivilingeniør* is a general term and is used to designate all engineering degrees at that level. About 75 percent of the students enter NTH directly from the general area of study of the upper-secondary school, while most of the remaining new students enter from the colleges of engineering *(ingeniørhøgskolen)*. Admission to NTH is highly selective, particularly in some faculties. Because of the rigid admissions standards, approximately 90 percent of the students complete their studies.

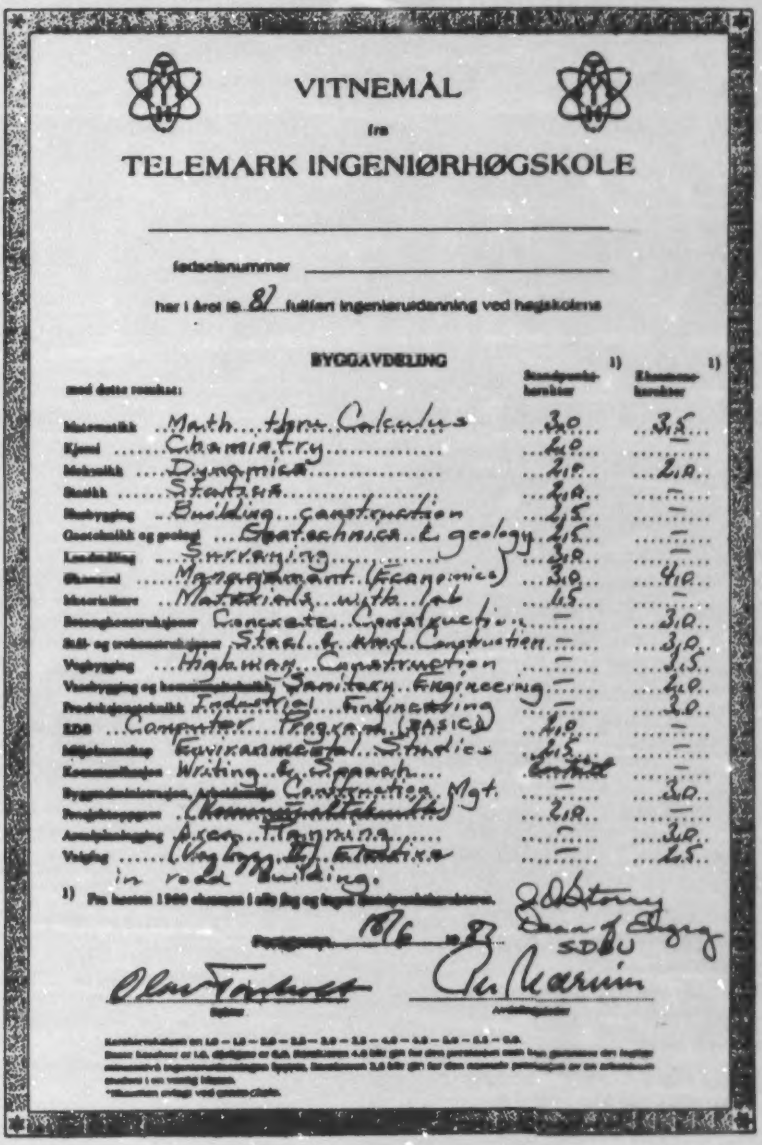
The *sivilingeniør* program is divided into three parts. The first two years consist of fundamental, or engineering foundation, courses. During the third and fourth years, the student enrolls in specialized courses in a selected field, e.g., electrical engineering. The final one-half year is for the preparation of the required thesis.

Faculties of engineering at NTH include architecture, which leads to the *arkitekt* degree, mining and metallurgical, civil and structural, electrical and computer, chemical, mechanical, naval architecture and marine engineering, and physics and general engineering science. NTH also offers programs in continuing education for administrators, a two-year program in nautical science, and an audit program in individual subjects.

The doctor of engineering degree *(doktor ingeniør)* requires two-and-one-half years of study beyond the *sivilingeniør* for a total of seven years.

The departmental structure within some faculties tends to be highly specialized. For example, there are 13 departments in the civil engineering program, including concrete structures, geodesy and photogram-

DOCUMENT 3. ***Vitnemål*** **(Certificate of completion): Telemark Ingeniørhøgskole (Telemark College of Engineering)**



VITNEMÅL

fra

TELEMARK INGENIØRHØGSKOLE

fødselsnummer _____

har i året 19 87 fullført ingeniørutdanning ved høgskolens

BYGGAVDELING

med dette resultat:	Standpoeng-karakter 1)	Eksamens-karakter 1)
Matematikk	Math. thru Calculus 3.0	3.5
Kjemi	Chemistry 2.0	
Mekanikk	Dynamics 2.0	2.0
Statikk	Statics 2.0	—
Bygningsfag	Building Construction 2.5	
Geoteknikk og geologi	Soil technics & geology 2.5	—
Landmåling	Surveying 2.0	—
Økonomi	Management (Economics) 3.0	4.0
Materialfag	Materials mech. lab 1.5	—
Betongkonstruksjoner	Concrete Construction —	3.0
Stål- og trekonstruksjoner	Steel & Wood Construction —	3.0
Veibygging	Highway Construction —	1.5
Vannbygging og kommunalteknikk	Sanitary Engineering —	2.0
Produksjonsteknikk	Industrial Engineering —	3.0
EDB	Computer Programming (BASIC) 2.0	—
Miljøkonsulent	Environmental Studies 2.5	—
Kommunikasjon	Writing & Diploma Thesis —	—
Byggeledelse, økonomi og	Construction Mgt. —	3.0
Prosjektoppgave	Thesis 2.0	—
Anvendelsesfag	Area Planning —	3.0
Valgfag	(Highway Eng. Hydraulics in road Building. —	2.5

1) Fra høsten 1969 skreven i alle fag og begge karakterskalaene.

Porsgrunn 18/6 - 87

Dean of Engineering SDBU

Oslo

Avdelingsleder

Karakterskalaen er 1,0 – 1,5 – 2,0 – 2,5 – 3,0 – 3,5 – 4,0 – 4,5 – 5,0 – 5,5 – 6,0.
Disse betyr: 1,0 dårligste, 4,0 tilstrekkelig og 6,0 fremragende. Karakterene 4,0 blir gitt for dem som tilfredsstiller minimumskravene til ingeniørutdanningen ved høgskolen. Karakterene 5,5 blir gitt for dem som oppnår gjennomsnittet av de arbeidende studenter i en viss klasse.
*Karakteren avlegg ved grenen-Civil.

BEST COPY AVAILABLE

metry, building technology, traffic engineering and transport planning, and steel structures.

In 1982, approximately 800 students were awarded the degree of *sivilingeniør* (civilian engineer), 55 the degree of *arkitekt* (architecture), and 50 students the *doktor ingeniør* (doctor of engineering).

5.

Folk High Schools (Folkehøgskoler)

Folk high schools, a Scandinavian innovation, have assumed an important educational role in Norway since the mid-nineteenth century. Folk high schools are residential schools, mostly for young adults, designed to provide for the "acquisition of knowledge, training of abilities, unfolding of interests, and education for citizenship."[1]

Folk high schools follow no standard curriculum, nor do they offer examinations. Courses range in length from one week to a full academic year, although no formal credit is awarded. Socialization and fellowship are emphasized, and less attention is given to scholarly endeavors than in the more traditional schools. Each school differs from the other, which supports the claim that they are the "freest schools in the world."[2] Enrollment is open to anyone who is at least 17 years of age. The school year usually begins in late August and ends in May.

The term *high school* is not meant to imply that *folkehøgskoler* (folk high schools) are secondary-level institutions. Nor are they considered in Norway as institutions of higher education, because students of secondary-school age, regardless of previous educational achievements, are eligible for admission.

Folk high schools attract a large number of foreign students. It is not uncommon for Americans to earn credit from colleges in the United States for prearranged study in one or several of the Norwegian folk high schools. The flexibility of the programs offered by the schools allows students to pursue serious scholarship if desired.

[1] "The Folk High Schools in Norway," Kåre Grytli. Oslo: Informasjonskontoret for Folkehøgskoler, 1979.
[2] Ibid.

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6. Tertiary Education

6.1. Introduction to Tertiary Education

Tertiary, or higher, education in Norway is built upon the 12-year elementary- and secondary-school plan. The higher-education structure consists of four universities and a regional-college system *(det regionale høgskolesystem)* that includes regional and specialized colleges. The specialized colleges offer courses of advanced study in agriculture, commerce, veterinary medicine, architecture, music, art, and other fields.

The universities are located in Bergen, Oslo, Tromsø, and Trondheim. While each offers a range of academic programs, both at the undergraduate and graduate levels, many degree programs are available at only one institution. For example, the University of Trondheim is the only institution offering university study in technology (see Chapter 4).

The regional college system, recent in Norway, includes approximately 140 institutions within 16 regional college districts. Within the system are colleges of engineering, government and social work, education, journalism, library science, health education, and nursing. Specialized colleges also offer tertiary courses in agriculture, commerce, veterinary medicine, architecture, social work, fishery science, music, maritime engineering, and in many other fields. Regional colleges *(distriktshøgskolen)* are located in 14 of the 16 regional college districts.

6.2. Universities

6.2.1. Introduction

The university system in Norway comprises four institutions: *Universitetet i Bergen* (University of Bergen), founded in 1948; *Universitetet i Oslo* (University of Oslo), founded in 1811; *Universitetet i Tromsø* (University of Tromsø), founded in 1968; and *Universitetet i Trondheim* (University of Trondheim), founded in 1969. In 1984 enrollment at the four universities was approximately 35,000 students. Because of a rapidly expanding regional-college system, universities are not planning for increased enrollments.

The academic year is 10 months, divided into two semesters. The first semester begins in late August or early September and ends in mid-December, and the second semester begins in early January and ends in mid-June. Norwegian universities are national institutions with a considerable degree of autonomy in academic affairs.

Admission to the universities is granted to students who show evidence of a specified standard on the certificate of completion *(vitnemål)* from the academic field of the upper-secondary school. While some programs are very competitive for entrance and require high marks in appropriate branches, other programs are accessible to all applicants who meet standard qualifications. The majority of students enter a university with a *vitnemål* (certificate) from the general area of study *(studieretning for allmenne fag)* in either the natural-science branch *(naturfaglinja)* or the social-science branch *(samfunnsfaglinja)*.

6.2.2. Degrees Awarded

The degree structure in Norwegian universities varies among institutions and among the faculties within each university. In general, the degree structure in Norwegian universities is as follows:

1. *Candidatus magisterii (Cand. mag.)*
   The first, or lower-level, university degree of approximately four years of study, consisting of three subjects.
2. *Candidatus oeconomiae (Cand. oecon.)*–economics
   Candidatus paedagogia (Cand. paed.)–education
   Candidatus philologiae (Cand. philol.)–philosophy
   Candidatus politicarium (Cand. polit.)–political science
   Candidatus psychologiae (Cand. psychol.)–psychology
   Candidatus realium (Cand. real.)–science
   Candidatus scientarium (Cand. scient.)–science
   Candidatus sociologiae (Cand. sociol.)–sociology
   Candidatus juris (Cand. jur.)–law
   Candidatus medicine (Cand. med.)–medicine
   The above, and others, are higher-level degrees that require between one-and-one-half to three years of specialized study in one subject area beyond the *cand. mag.* Acceptance into one of these higher-degree programs is gained by students who have specialized in an appropriate subject area in the lower-degree program.
3. *Magister artium (Mag. art.)*
   The *mag. art.* is a higher degree in sciences, philosophy, history, and other social sciences that requires a thesis, and more specialization and research than is characteristic of the degrees listed above. Entry into the *mag. art.* program requires completion of the

lower degree, *cand. mag.*, and consists of two to three years of additional study.

4. *Doktor* (Doctorate)
   There are two types of doctorates awarded by Norwegian universities. One requires at least two years of coursework beyond the higher degree *(mag. art.)*, or four years beyond the *Cand. mag.* and an additional two years of full-time study for the preparation of the dissertation. The student then is awarded one of the following titles: *Doktor artium (Dr. art.)* (humanities); *Doktor politicarum (Dr. polit.)* (political science); *Doktor scientiarum (Dr. scient.)* (science); and *Doktor ingeniør (Dr. ing.)* (engineering).
   The other doctorate is a degree obtained after several years of research including the writing of an advanced thesis based on independent academic work. The student then is awarded one of the following titles: *Dr. phil.* (social science and natural science); Dr. med. vet. (veterinary medicine); *Dr. odont.* (denistry); *Dr. tech.* (technology); and *Dr. oecon.* (economics).

6.2.3. Examinations

A student's progress through a Norwegian university is based on a series of comprehensive examinations taken at various levels of study. Thus, a student's record will show only the results of those examinations and will not include a listing of courses and grades earned. The composite result of the comprehensive examinations leading to a degree is known as the *embetseksamen* (official examination).

Comprehensive examinations are held toward the end of every semester and students register for those examinations when they feel adequately prepared. Credit is given only for the examinations, not for individual courses.

All students except those enrolled in dentistry and pharmacy must complete a one-semester course in order to take the *examen philosophicum*, before becoming candidates for other examinations. The *examen philosophicum* is a preliminary examination in philosophy, logic, and psychology, and the course is given every semester both in the Norwegian and English languages. Following are the major examinations offered by Norwegian universities that lead to degrees:

1. *Grunnfag* (basic, or subsidiary, subject level). This examination generally requires two semesters of concentrated study beyond the *examen philosophicum*. Instruction for the *grunnfag* is usually not obligatory, but is highly recommended.
2. *Mellomfag* (intermediate, or minor, subject level). A *mellomfag* generally requires three semesters of preparation beyond the exa-

men philosophicum. In departments where a *grunnfag* is offered, the two semesters of preparation for that examination can be included in the three semesters required for a *mellomfag*.

3. *Semesteremne* (a one-semester topic). An examination of either one full semester or two half semesters in length. A *grunnfag* or a *mellomfag* is prerequisite to taking this examination.
4. *Storfag* (a major subject). The *storfag* requires one semester of study in addition to the *mellomfag*, or two semesters of study in addition to the *grunnfag*. *Storfag* courses are offered only in a limited number of subject areas and can be taken only if a *mellomfag* in the same subject area has been completed.
5. *Hovedfag* (main subject). This examination usually requires four or five semesters of study after completion of the *mellomfag* in the same subject. *Hovedfag* studies are usually begun after the completion of the *cand. mag.* degree. In addition to coursework and examinations, a major research paper *(hovedoppgave)* is required.

To summarize: The structure of a program leading to both a lower or a higher degree requires a combination of subjects from the three levels: *grunnfag* (basic courses), *mellomfag* (intermediate courses), and *hovedfag* (main course). Students may also complete a *storfag* (a major course following a *mellomfag*), or a *semesteremne* (a one-semester course). Students may decide on the depth of their concentration within a given field and select a level of study with certain options regarding the number and type of examinations. The Norwegian plan is similar to the selection of majors, minors, and cognates that characterizes American bachelor's and master's degree programs.

6.2.4. Faculties of Four Universities

Tables 7, 8, 9, and 10 that follow provide a general description of the faculties, courses, academic degrees, and average length of study for each degree at the four Norwegian universities.

TABLE 7. Faculties of *Universitetet i Bergen* (University of Bergen)

Faculty	Courses Offered	Academic Degrees	Average Length of Study
Liberal Arts	art history, English, folklore, French, general literature, geography, German, Greek, Greek culture, history, Italian, Latin, linguistics, logic, Nordic archeology, Norwegian, Old Norse, philology, philosophy, phonetics, history of religion, Roman culture, Russian, Spanish, Christianity, folk life study, theater and drama	*Cand. mag.* *Cand. philol.* *Dr. art.* *Dr. philos.*	4 years 6 years 8 years
Social Sciences	comparative politics, economics, geography, history, information science (computer science), public law, public administration and organization theory, social anthropology, the study of society, sociology	*Cand. mag.* *Cand. polit.* *Dr. polit.* *Dr. philos.*	4 years 6 years 8 years
Mathematics and Natural Sciences	mathematics, physics, chemistry, geo- subjects, biology, informatics.	*Cand. mag.* *Cand. scient.* *Dr. scient.*	3½ years 5½ years 7½ years
Medicine*	preclinical studies clinical studies	*Cand. med.* *Dr. med.*	6½ years 1½ years' internship
Dentistry*	preclinical studies clinical studies postgraduate studies	*Cand. odont.* *Dr. odont.*	5 years
Psychology*		*Cand. psychol.* *Dr. philos.*	6½ years
Law		*Cand. jur.* *Dr. jur.*	5 years

* Restricted admission

TABLE 8. Faculties of *Universitetet i Oslo* (University of Oslo)

Faculty	Courses Offered	Academic Degrees	Average Length of Study
Liberal Arts* (Philology)	language subjects: Norwegian, English, French, German, Arabic, Bulgarian, Czechoslovakian, Chinese, Dutch, Finnish, Gaelic, Greek, Hebrew, Indic, Italian, Japanese, Lappish, Latin, Polish, Portuguese, Russian, Serbo-Croatian, Spanish, Welsh	*Cand. mag.* *Cand. philol.* *Mag. art.* *Lic. philos.* *Dr. philos.*	4 years 6 years 6–7 years
	in addition to the above: general Germanic, Romance, and Indo-European linguistics		
	aesthetic subjects: general literature, music, art history, and theater		
	other subjects (mainly historical): history, geography, classical archeology, Old Norse archeology, ethnology, folklore, history of ideas, philosophy, Christianity and history of religion		
Mathematics and Natural Sciences	biology (biology, limnology), nutrition, pharmacy, physics (physics, astronomy), earth sciences (geophysics, geography, geology) computer science, chemistry, mathematics (mathematics, mechanics), statistics	*Cand. mag.* *Cand. scient.* *Dr. scient.* *Dr. philos.*	3½ years 5–5½ years 7–7½ years
Pharmacy*		*Cand. pharm.*	5 years
Social Sciences*	economics, pedogogy, social pedagogy, political science, psychology, social anthropology, sociology, and statistics	*Exam. oecon.* *Cand. oecon.* *Cand. mag.* *Cand. polit.* *Cand. paed.* *Cand. psychol.* *Cand. sociol.* *Mag. art.*	5½–6 years 4½ years 6½ years 7 years 7 years 6 years

(continued)

TABLE 8. (continued)

Faculty	Courses Offered	Academic Degrees	Average Length of Study
Social Sciences* (*continued*)		*Lic. oecon.* *Lic. philos.* *Dr. philos.*	
Theology	(Instruction chiefly related to the doctrines of the Evangelical Lutheran Church)	*Cand. theol.* *Lic. theol.* *Dr. theol.*	6–7 years
Law		*Cand. jur.* *Lic. jur.* *Dr. juris.*	5–6 years
Medicine*		*Cand. med.* *Dr. med.*	6–7 years
Dentistry*		*Cand. odont.* *Lic. odont.* *Dr. odont.*	5 years

* Restricted admission

TABLE 9. Faculties of *Universitetet i Tromsø* (University of Tromsø)

Faculty	Courses Offered	Academic Degrees	Average Length of Study
Medicine	medicine	*Cand. med.* *Dr. med.*	6 years
Language and Literature studies	Nordic, English, German, Russian, Lappish, Finnish, Classical studies	*Cand. mag.* *Cand. philol.* *Mag. art.* *Dr. philos.*	4 years 6 years 6–7 years
Social Sciences	social science, philosophy, history, archeology, public administration and organization	*Cand. mag.* *Cand. polit.* *Mag. art.* *Dr. philos.*	4 years 6 years 6–7 years
Mathematics and Natural Sciences	biology, informatics, physics, geology, chemistry, mathematics, statistics	*Cand. mag.* *Cand. scient.* *Dr. scient.*	3½ years 5½–6 years 8–8½ years
Fishery	fishery	*Fiskerikandidat*	4½ years
Nursing	teacher training in nursing	*Sykepleie-pedagog*	2 years

TABLE 10. Faculties of *Universitetet i Trondheim* (University of Trondheim)

Faculty	Courses Offered	Academic Degrees	Average Length of Study
Faculty of Philology	anthropology, drama, film and theater, English, French, German, History, Music, Nordic, philosophy, phonetics, religion	*Cand. mag.* *Cand. philol.* *Mag. art.* *Dr. philos.*	4 years 6 years 7 years
Faculty of Social Sciences	geography, advanced studies for social workers, pedagogy, psychology, social studies, sociology	*Cand. mag.* *Cand. polit.* *Mag. art.* *Dr. philos.*	4 years 6 years 7 years
Faculty of Mathematics and Science	biology, botany, chemistry, environmental sciences, mathematics, marine biology, statistics, zoology	*Cand. mag.* *Cand. scient.* *Dr. scient.* *Dr. philos.*	3½ years 5½ years 7½ years
Norwegian Institute of Technology	(See Chapter 4.)		

6.3. Specialized Colleges

6.3.1. Introduction

There are numerous tertiary institutions throughout Norway that offer specialized instruction. Some examples of specialized institutions are listed below:

- *Bedriftsøkonomisk Institutt* (Institute of Business Administration, Oslo, also known as the Norwegian School of Management)
- *Handelsakademiet* (College of Business Administration)
- *Norges Fiskerihøgskole* (Norwegian College of Fisheries)
- *Norges Handelshøyskole* (Norwegian School of Economics and Business Administration)
- *Norges Idrettshøgskole* (Norwegian College of Physical Education and Sport)
- *Norges Landbrukshøgskole* (Norwegian College of Agriculture)
- *Norges Musikkhøgskole* (Norwegian College of Music)
- *Norges Veterinærhøgskole* (Norwegian College of Veterinary Medicine)
- *Oslo Arkitekthøgskole* (Oslo College of Architecture)
- *Statens Kunstakademi* (National Academy of Art)
- *Stiftelsen Markedsføringsskolen* (School of Marketing)
- *Økonomisk College* (College of Business and Economics)

Admission to most of the programs offered by the specialized colleges is very selective. Typically, successful candidates for admission have achieved high grades in the natural-sciences branch of the general area of study, although students from the other branches of the area are entitled to admission to some fields. Holders of certificates from the clerical and commercial subjects area of study, while legally qualified for admission, are seldom admitted. Students may also gain admission to the specialized colleges by passing subject examinations or by demonstrating job experience and competence. In music and art, special skills are required. As in all levels of Norwegian education, older students with relevant work experience are given special consideration for admission.

Following are brief descriptions of tertiary programs in agriculture and economics, and business administration.

6.3.2. *Norges Landbrukshøgskole* (Norwegian College of Agriculture)

Admission to the university-level Norwegian College of Agriculture (NLH) is very selective. Most successful applicants have achieved excellent grades in the natural sciences branch of the general area of study. A few older students from vocational schools and agricultural secondary schools are admitted after relevant work experience and additional preparatory work in mathematics and science.

Located in Ås, near Oslo, NLH had an enrollment in 1983 of 850 regular students and an additional 150 students enrolled in off-campus, preparatory cousework. The institution is composed of 34 departments within which students are offered numerous study options. Major academic divisions at NLH are animal husbandry, food technology, mathematics and natural sciences, plant production, social sciences, and technical sciences. Study options include agricultural engineering, farm management, forest economy, landscape architecture, surveying, wildlife management, soil science, and many other programs. Between 10 and 20 percent of the student's coursework may be free electives. A typical agricultural-degree program is three years and leads to the candidatus agriculturæ *(cand. agric.)*.

Agriculture, at both the secondary and tertiary levels of education, falls under the authority of the Ministry of Agriculture.

6.3.3. Business and Economics Institutions

The fields of economics and business administration are rapidly expanding areas of study in Norway. Employment opportunities for graduates are at the entry, middle-management, and upper-management levels. The popularity of these programs, coupled with the limited availability of space in the tertiary institutions, has created a highly selective and competitive admissions stituation. Only 10 to 20 percent of the applicants to economics and business administration colleges are admitted. For example, in 1984 *Norges Handelshøyskole* (Norwegian School of Economics and Business Administration) had 2,500 applicants for 275 places. The high quality of entering students contributes to the program completion rate of approximately 90 percent.

There are three tertiary institutions in Norway that offer four-year degree programs in economics and business administration. They are the *Norges Handelshøyskole* (Norwegian School of Economics and Business Administration) in Bergen), *Bedriftsøkonomisk Institutt* (Institute of Business Administration in Oslo, also known as the Norwegian School of Management), and *Handelsakademiet* (College of Business Administration) in Oslo. In addition, *Økonomisk College* (College of Business

and Economics) in Oslo, and most other regional colleges *(distriktshøgskoler)* offer academic courses lasting two and three years. *Stiftelsen Markedsføringsskolen* (School of Marketing) in Oslo offers a one-year business program. Brief descriptions of these five institutions follow.

6.3.3.1. *Norges Handelshøyskole* (Norwegian School of Economics and Business Administration)

Norges Handelshøyskole was established in Bergen in 1936. It is a public institution offering a four-year undergraduate program and postgraduate studies in both economics and business administration.

The four-year undergraduate program leads to the degree of *siviløkonom* (civilian economist) and comprises two parts. Part one takes three years (six semesters) to complete, while part two can be completed in one year (two semesters). In part one, students must successfully complete 10 compulsory and two elective subjects. Those first three years are designed to give students a broad introduction to business administration, economics, and general subjects. In part two, the student chooses two fields of specialization from 11 subject fields. An academic year at the *Norges Handelshøyskole* usually consists of 26 semester hours, or credits.

Other degrees offered by the institution are:

- *Handelslærer eksamen*—a teacher's degree normally awarded after one-and-one-half to two years of study following completion of the *siviløkonom* degree.
- *Siviløkonom med høyere avdeling eksamen*, or *siviløkonom H.A.E.* (higher-department examination)—a graduate-level degree in business administration, economics, or the behavioral sciences. This degree is normally awarded after two years of study following the completion of the *siviløkonom* degree.
- *Licenciate*—a graduate-level degree in business administration, economics, or economic geography. This course of study normally requires one to one-and-one-half years beyond the *siviløkonom H.A.E.* degree. A thesis is required.
- *Doktor oeconomiae*—a doctor of economics degree awarded for a published thesis.

The *Norges Handelshøyskole* employs a pass/fail grading plan for courses in mathematics, statistics, data processing, and computer programming. The same system is used for subjects studied in part two. Other courses are graded by a 9 (high) to a 0 (low) scale, with 2 as the lowest passing mark.

6.3.3.2. *Bedriftsøkonomisk Institutt* (Norwegian School of Management, Oslo)

The *Bedriftsøkonomisk Institutt* is a private institution that offers a four-year program in management studies. The *Institutt* is also known as the Norwegian School of Management. Although it is an independent foundation, one-third of its financial support comes from government grants.

The four-year program leads to a *diplomøkonom* (diploma in economics), which qualifies graduates for management positions in both the public and private sectors. Plans are under way to offer the *siviløkonom* (civilian economist degree) in the near future. The academic year for the *diplomøkonom* is 10 months and is divided into two semesters. Full-time students carry 10 credits each semester, for a total of 80 credits for the entire program. Compulsory subjects give 58 credits; the major area of study is 15 credits and the thesis is 10 credits. Table 11 displays a distribution of credits by subject area. *Bedriftsøkonomisk Institutt* has a program with a major university in the United States where selected *Institutt* graduates are admitted to the graduate program in business administration.

TABLE 11. Course Requirements for the *Diplomøkonom* degree of the *Bedriftsøkonomisk Institutt* (Norwegian School of Management, Oslo)

Subject Area	Semester Credits
Quantitative methods	12
Business law	3
Information and data systems	6
Business economics analysis	10
Organization and management	6
Business logistics	2
Marketing	4
Macroeconomics	6
Public administration	2
Seminar	2
Foreign language and communciations	5
Major area of study	12
Thesis	10
Total	80

Other degrees awarded by the *Institutt* are:

- *Registrert revisor* (registered accountant)—a certificate that requires three years of full-time study and at least two years of practical auditing experience.
- *Bedriftsøkonom* (business economics)—a two-year undergraduate certificate program that is usually completed on a part-time basis

and includes summer-school attendance. This program of study is primarily for people who have had significant work experience.

6.3.3.3. *Handelsakademiet* (College of Business Administration)

Handelsakademiet, founded in 1967 in Oslo, is a private institution that offers a four-year undergraduate program in management and business administration. It is a nonprofit institution and is partially funded by annual government appropriations. The four-year undergraduate program was instituted in the fall of 1980. Previously, the college offered a three-year program that has since been phased out.

The four-year program leads to the degree, *handelsøkonom* (commerce and economics), which enables holders to apply for leading positions in business. The academic year is divided into two semesters, with students carrying 19 to 21 credits each semester during the first three years. During the fourth year, students carry 18 credits, which includes credit for a thesis in the major area of study. The full four-year program consists of 137 credit hours. Many of the members of the college's faculty hold leading positions in business, the civil service, and the academic community.

6.3.3.4. *Økonomisk College* (College of Business and Economics)

Økonomisk College in Oslo offers a two-year integrated program in business administration and economics and a three-year program in accountancy. The first-year courses are the same for all students. Completion of the two-year program is recognized by Norwegian universities as being equivalent to an intermediate subject, *storfag*. The three-year program in accountancy prepares students to enter directly into the accounting and auditing fields. An academic year consists of two semesters, and students must complete 40 credits for the two-year program and 60 credits for the three-year program. The college is considered one of the regional colleges *(distriktshøgskolen)*.

Document 4 illustrates a typical student record form at the *Økonomisk College* for a student in a two-year program of economics.

6.3.3.5. *Stiftelsen Markedsføringsskolen* (School of Marketing)

The *Stiftelsen Markedsføringsskolen* (School of Marketing) was established in Oslo in 1918. It is a private, independent school offering programs in marketing and administration, international marketing, and advertising. Programs are one year in duration for full-time students and two years for part-time students. Certificates are awarded to students who complete the program and pass the official government examination.

Admission to the School of Marketing is based on any one of several criteria; completion of the introductory marketing course with above-

DOCUMENT 4. Student Record Form: *Økunomisk College* (College of Business and Economics)

VITNEMÅL

for

Høyskolekandidateksamen ved Økonomisk College

navn _____ fødselsnummer _____

har i 19____bestått eksamen ved ØKONOMILINJEN med følgende karakterer:

	Fag *Subjects*	Karakter *Grade*	Vekttall *Credits*	Måned/år *Month/year*
1. avdeling *First year*	**Bedriftsøkonomi** *Business administration and economics*		4	
	Samfunnsøkonomi *Principles of economics*		4	
	Rettslære *Law*		4	
	EDB *Electronic data processing*		2	
	Matematikk *Mathematics*		2	
	Skriftlig *Written* ..... Muntlig *Oral*		4	
2. avdeling *Second year*	**Statistikk** *Statistics*		2	
	Administrativ databehandling *Administrative data processing*		2	
	Kostnadsregnskap *Cost accounting*		2	
	Finansiering *Finance*		2	
	Økonomisk analyse *Economic analysis*		2	
	Regnskapslære *Accounting*		2	
	Skatterett *Taxation law*		2	
	Markedsføring *Marketing*		2	
	Organisasjon *Organization*		2	
	Skriftlig *Written* ..... Muntlig *Oral*		4	
	Gjennomsnittskarakter/Sum vekttall *Average Grade/Credits*		42	
	Forkurs i *Propaedeutic course in:* **Matematikk** *Mathematics* **Regnskapslære** *Accounting*			

Oslo, _____

Rektor *Principal*

average examination results, 11 years of basic/secondary schooling with enrollment in the economics branch, or completion of the academic upper-secondary school. As is true in public tertiary education, age and relevant work experience are heavily considered in admissions decisions.

6.4. The Regional College System *(Det regionale høgskolesystem)*

6.4.1. Introduction

The regional college system *(det regionale høgskolesystem)*, recent in Norway, includes approximately 140 institutions in 16 regional college districts. It comprises institutions that offer professional training covering two to four years of study. Within the system are colleges of engineering, government and social work, education, journalism, library science, health education, maritime science, and others. Included in the system are 14 regional colleges *(distriktshøgskoler)* offering higher education on a broader scale.

The regional college system was authorized to confer the *candidatus magisterii (cand. mag.)* degree in January 1981. Students who have studied a minimum of four years to complete two or more study programs in an institution within the regional-college system may be awarded the *cand. mag.* In compliance with Norwegian law, study programs from institutions in the regional-college system can be transferred to Norwegian universities on a year-for-year basis.

6.4.2. Regional Colleges (Distriksthøgskoler)

Regional colleges were established as a part of the Norwegian higher-education system in 1969. By January 1984, there were 14 regional colleges strategically located in the 16 regional-college districts in Norway. That is to say, one regional college is located in all but two of the 16 districts. Regional colleges were established to provide students with alternative study programs outside the scope of existing university courses, to provide education[illegible]pportunities in a number of basic university requirements, and to m[illegible]t the demand for new programs on both the regional and the national levels. In addition, the regional colleges offer adult education through extension services and to some extent carry out research connected mainly with regional problems. Their primary role, however, is to provide students with two to three years of employment-oriented training and intermediate courses that serve as a basis for further study.

Applicants for admission to a regional college are expected to have

completed the upper-secondary-school certificate of completion *(vitnemål)* in the general area of study or the clerical and commercial subjects area of study. Older students who do not hold the appropriate academic credentials may be considered for admission based on their age and practical work experience. Admission to a regional college is highly competitive, with approximately 20 percent of the total applicants gaining admission. The level of competition for admission for places varies among the colleges and the subject areas.

The subjects offered by the 14 regional colleges are broad and comprehensive and include courses or programs designed to meet the specific needs of the regions. The most frequently offered is the two-year combined studies program in economics and business administration *(2-årig økonomisk/administrativt studium)*, which qualifies successful students for lower- and middle-management jobs in both the private and public sectors. Programs include curriculums of one, two, and three years based on two 18-week semesters each year. A student usually enrolls for 10 credits each semester. Students who have completed the two-year program (40 credits) obtain the degree *høgskolekandidat*, (regional-college candidate). A three-year program at a regional college (60 credits, or more) results in additional courses listed on the transcript, although no new degree is conferred. Regional colleges also offer a one-year curriculum that can be applied to a *cand. mag.* degree, the first university degree. This one-year curriculum, however, may not be applied to the requirements for the *høgskolekandidat*. Typical of the courses in the one-year curriculum are mathematics, history, physics/chemistry, biology/chemistry, and the study of Norwegian, English, German, and French.

The permanent full-time teaching staff at regional colleges must meet the same academic requirements as fully qualified lecturers at universities. Two- and three-year programs of study at regional colleges are considered academic or higher-level education, aimed at preparing students for both continuing education and employment.

Document 5 on page 50 is a sample transcript in English issued by *Agder Distriktshøgskole* (Agder Regional College), which shows that the student completed the diploma requirements for the two-year program in shipping and business administration. The grading scale is described on the transcript.

DOCUMENT 5. Student Record: *Agder Distriktshøgskole* (Agder Regional College)

AGDER DISTRIKTSHØGSKOLE

Postboks 607, N-4601 Kristiansand S.
AGDER COLLEGE
P.O.BOX 607 N-4601 KRISTIANSAND S

DIPLOMA

HØGSKOLEKANDIDAT (COLLEGE GRADUATE)

BORN ON JUNE 20. 1959

HAS COMPLETED OUR STUDY PROGRAM IN

SHIPPING AND BUSINESS ADMINISTRATION (2 YEARS)

CODE	SUBJECT	CREDIT	GRADE	SEMESTER
BEDØK 2	COST- AND INCOME ANALYSIS	2	3.0	F-81
KVANT 1	MATHEMATICS (CALCULUS)	2	2.5	F-81
ORG 1	ORGANIZATION THEORY 1	2	4.0	F-81
SAMVIT 1	MACRO-ECONOMICS	2	4.0	F-81
KVANT 6	STATISTICS 1	2	3.5	S-82
BEDØK 15	BUSINESS POLICY AND STRATEGY (MANAGERIAL ECONOMICS)	2	PASS	S-82
BEDØK 3	FINANCING AND INVESTMENTS (MANAGERIAL FINANCE)	2	3.5	F-82
BEDØK 10	MARITIME ECONOMICS	2	3.5	F-82
EDB 1	INTRODUCTION TO ELECTRONIC DATA PROCESSING	2	3.0	F-82
ORG 6	BUSINESS ORG. AND MANAGEMENT RELATING TO SHIPPING ACT.	2	2.5	F-82
SAMVIT 4	ECONOMIC GEOGRAPHY	2	3.5	F-82
BEDØK 7	THE FUNCTIONS OF MARKETING AND CONSUMER THEORY	2	4.0	S-83
BEDØK 14	ACCOUNTING ANALYSIS	2	3.0	S-83
BEDØK 18	FREIGHTING	2	2.0	S-83
JUR 4	MARITIME LAW	4	3.5	S-83
SAMVIT 2	MICRO-ECONOMICS	2	3.0	S-83
SAMVIT 5	INTERNATIONAL TRADE AND TRANSPORT	2	2.0	S-83
BEDØK 6	ACCOUNTING ANALYSIS 2	2	2.5	F-83
BEDØK 16	ADVANCED COURSE ON ACCOUNTING	2	3.5	F-83
STATVIT 6	GOVERNMENTAL INSTITUTIONS AND DECISION-MAKING PROCESSES	2	3.5	F-83
JUR 1-2	LAW 1	4	3.0	S-84
ORG 10	PERSONNEL ADMINISTRATION AND MANAGEMENT	2	3.5	S-84
SAMVIT 36	PUBLIC ACCOUNTING AND BUDGETTING	2	3.5	S-84
	SEMINAR THESIS APPROVED	2		02/84
	TOTAL	52		

SUBJECT OF SEMINAR THESIS:
KOMANDITTSELSKAPET.

A HØGSKOLEKANDIDAT (COLLEGE GRADUATE) DIPLOMA IS OBTAINED WHEN THE STUDENT HAS TAKEN A TOTAL OF 40 CREDITS OVER A TWO-YEAR PERIOD.

THE GRADING SYSTEM IS AS FOLLOWS: THE GRADES RUN FROM 1.0 TO 6.0. 1.0 IS THE HIGHEST GRADE AND THE LOWEST PASSING GRADE IS 4.0. PASS / FAIL IS USED IN SOME COURSES.

KRISTIANSAND [illegible] JUNE 82 [illegible]

[illegible]

PRESIDENT

The 14 *distriktshøgskoler* (regional colleges) and their 1984 enrollments are listed in Table 12.

TABLE 12. Regional Colleges *(Distriktshøgskoler)* and Enrollments, 1984

Name	1984 Enrollment
Agder Distriktshøgskole	1,200
Alta Distriktshøgskole	220
Hedmark Distriktshøgskole	225
Møre og Romsdal Distriktshøgskole, Molde	645
Møre og Romsdal Distriktshøgskole, Volda	535
Nordland Distriktshøgskole	670
Nord-Trøndelag Distriktshøgskole	310
Oppland Distriktshøgskole	580
Rogaland Distriktshøgskole	1,335
Sogndal Distriktshøgskole	275
Telemark Distriktshøgskole	815
Trondheim Økonomiske Høgskole	385
Økonomisk College, Oslo	210
Østfold Distriktshøgskole	355

Note: The above regional-college enrollment figures were published in October 1984 by the Norwegian government in *The State Budget 1985*.

6.4.3. Colleges of Nursing *(Sykepleierhøgskoler)*

Nursing education in Norway is a three-year, tertiary, professional program under the auspices of the National Council for Nurses' Training, an advisory body for the Ministry of Cultural and Scientific Affairs. Applicants for admission to the 32 colleges of nursing are expected to have completed secondary school in an academic area of study. Special consideration is given to older students with practical experience. The average nursing student is approximately 25 years of age. Admission to the colleges of nursing is highly competitive. During one recent year there were 1,670 applicants for 40 places at the *Statens Sykepleierskole* (National College of Nursing) in Oslo.

6.4.4. Colleges of Health Education *(Helsefaghøgskoler)*

All tertiary health schools *(helsefaghøgskolen)* in Norway are part of the regional college system under the authority of the Ministry of Cultural and Scientific Affairs. In addition to the three-year nursing-education program *(sykepleierutdanning)*, which was described above, programs of study include:

Course of Study	Length of program (in years)
Occupational-therapist education *(ergoterapeututdanning)*	3
Physical-therapist education *(fysioterapeututdanning)*	2½
Laboratory-technician education *(fysiokjemikerutdanning)*	2
Prosthetist-technician education *(protesetek nikerutdanning)*	3
X-ray-technician education *(radiografutdanning)*	3
Mentally handicapped nursing education *(vernepleierutdanning)*	3
Postbasic advanced nursing *(videreutdanning i sykepleie)* (special course in midwifery, public health, and psychiatric nursing)	1

Applicants for admission to the above programs of study are expected to have completed the upper-secondary school in the academic field. The vast majority of the students enter from the natural sciences, social sciences, or the languages branch of the general area of study. Older students who have not completed upper-secondary school may be considered for admission on the basis of their age, practical experience, and standards achieved in certain foundation and branch subjects in secondary school.

Completion of one of the above courses of study qualifies the graduate for a professional certificate and title, e.g., occupational therapist, physical therapist, etc. The adherence to curriculum, regulations, and standards are monitored closely by state councils.

6.4.5. Colleges of Education *(Pedagogiske Høgskoler)*

There are approximately 30 colleges of education *(pedagogiske høgskoler)* located throughout Norway. The colleges are administered as a part of the regional college system *(det regionale høgskolesystem)* under the authority of the Ministry of Cultural and Scientific Affairs. Included among the colleges of education are special colleges that provide teacher training in arts and crafts, music, home economics, physical education, commercial and clerical subjects, and in working with the handicapped.

Teacher training is a three-year tertiary program that prepares students for three categories of teacher certification; *førskolelærer,* a teacher qualification for preschool and kindergarten; *allmennlærer,* a teacher qualification for most basic-school subjects; and *faglærer,* a teacher qualification for basic school, and one or more subjects at the upper-secondary school level. A *faglærer* (teacher) may come from a special training college, have a university background, or be a trained craftsman with practical experience in the subject area to be taught.

The National Council for Teacher Training, an advisory body for the

Ministry of Cultural and Scientific Affairs, is responsible for entrance requirements to colleges of education and the selection of candidates. Applicants for admission to teacher-education programs at all levels are expected to have completed the upper-secondary school in the academic field. Older applicants with appropriate education in combination with significant work experience are given special consideration. The Norwegian government is forecasting an oversupply of teachers at most levels and has planned a substantial reduction in the number of entering students.

The following model illustrates a typical three-year college of education teacher-training program:

First Year	Second Year	Third Year
Education theory	Education theory	Special study or Two one-half-year courses
Practical teaching ——— ♦		
Norwegian	Option courses	
Religion	Short courses	

An additional fourth year may lead to the *cand. mag.* degree.

Students who successfully complete the three-year teacher-training program are awarded a *vitnemål* (certificate) indicating the category or certification, e.g., *allmennlærerutdanning*.

Most colleges of education offer one-year courses *(ettårsenhet)* and one-semester courses *(halvårsenhet)* as a fourth year of further education. The fourth year of enrollment, after completion of the basic course, enables students to earn a *candidatus magisterii (cand. mag.)* degree at a college of education. Students who have completed the basic teacher-education program may also attend advanced courses at a university. Students who transfer from a college of education to a Norwegian university will receive year-for-year credits, as mandated by Norwegian law.

There are three types of teaching titles used in Norway: *lærer*, a teacher who has taken a three-year course at a college of education; *adjunkt*, a teacher who has either an additional year at a college of education, or the *cand. mag.*; and, *lektor*, a teacher who has a second university degree, usually awarded after three years beyond the basic course in a college of education or two years beyond the *cand. mag.*

6.4.6. Maritime Colleges (Maritime Høgskoler)

Admission to a maritime college *(den maritime høgskole)* can be gained either by completing the general area of study *(vitnemål, studieretning*

for allmenne fag) of the upper-secondary school, preferably in the natural sciences branch, or by completing the maritime area of study of the upper-secondary school. Students from the general area of study can complete the two-year maritime-college program in one-and-one-half years if they satisfy the one-year practical work requirement. Students may also transfer to a maritime college from a college of engineering *(ingeniørhøgskole)*, and can complete the program in one year if the practical work requirement has been satisfied. The two-year program leads to the degree, *maritim ingeniør* (maritime engineer).

The eight maritime engineering colleges in Norway enroll approximately 800 students. Students follow either the nautical branch, marine engineering branch, or electrician branch. As is true in the secondary-level maritime schools, the electrician program is the most rigorous and competitive for admission. A third year, which is compulsory only for those who seek the highest nautical certification, sea captain, consists of concentrated study of marine administration.

Throughout the maritime-college curriculum, coursework is heavily slanted toward practical and technical subjects. Mathematics and science courses emphasize applied rather than theoretical approaches to subject matter.

6.5. Tertiary-Education Grading

Below is listed the general grading terminology that may appear on a student's record.

Grades Given in Letters	Grades given in figures
Særdeles tilfredsstillende (s. tf.) (excellent)	seks = 6
Meget tilfredsstillende (m. tf.) (very good)	fem = 5
Tilfredsstillende (tf.) (good)	fire = 4
Noenlunde tilfredsstillende (ng. tf.) (fair)	tre = 3
Måtelig (poor)	to = 2
Ikke tilfredsstillende (ik. tf.) (fail)	en = 1 null = 0

Universities

In general, the following grading system is used at the universities in Oslo, Bergen, Tromsø, and Trondheim.

		Suggested United States Equivalent
laudabilis prae ceteris	1.00–1.50 excellent	A
laudabilis	1.51–2.50 very good	B
haud illaudabilis	2.51–3.25 good	C
non contemnendus	3.26–4.00 fair/poor	D

The following are the grading systems used by the Faculty of Law and the Faculty of Medicine at the universities of Oslo, Bergen, and Tromsø.

Faculty of Law		Suggested United States Equivalent
laudabilis (high)	1.00–2.15	A
står til laudabilis	2.16–2.35	
kan få laudabilis	2.36–2.55	
kan vel få laudabilis	2.56–2.75	B
haud illaudabilis	2.76–2.95	C
står til haud illaudabilis	2.96–3.15	D

Faculty of Medicine		Suggested United States Equivalent
laudabilis cum litteris commendatitis (high)	12.00–11.00	A
laudabilis	10.99– 9.00	B
haud illaudabilis	8.99– 7.00	C
noncontemnendus (lowest passing grade)	6.99– 6.00	D

The following are the grading systems used at a variety of institutions in Norway.

Grading System at Norwegian College of Agriculture *(Norges Landbrukshøgskole, or NLH)*			
1.00–1.50	=	excellent	A
1.51–2.00	=	very good	B
2.01–3.00	=	good	C
3.01–4.00	=	fair/poor	D
4.01–5.00	=	fail	F
Grading System at Norwegian Institute of Technology *(Norges Tekniske Høgskole, or NTH)*			
1.00	=	outstanding	A+
1.50–2.00	=	very satisfactory	A
2.50–3.00	=	satisfactory	B
3.50–4.00	=	moderately satisfactory	C
4.50–5.00	=	poor	D
5.50–6.00	=	not satisfactory	F
Grading System at Norwegian School of Economics and Business Administration *(Norges Handelshøgskole)*			
9	=	best (rarely awarded)	A
8	=	very high	A
7			A
6			B
5			B
4			C
3			C
2	=	lowest passing mark	D
1			F
0	=	poorest	F
Grading System at Norwegian School of Management *(Bedriftsøkonomisk Institutt)*			
1.0–1.5	=	excellent (rarely awarded)	A
1.6–2.2	=	very good	B
2.3–2.9	=	good	C
3.0–3.5	=	fair	D
3.6–6.0	=	fail	F
Grading System at College of Business Administration *(Handelsakademiet)*			
1.0–2.25	=	excellent	A
2.5–3.25	=	good	B
3.5–3.75	=	fair	C
4.00	=	pass	D
4.25–6.00	=	fail	F

Grading System at College of Business and Economics in Oslo
(Økonomisk College)

1.0	=	excellent	A
1.5			A
2.0	=	good	B
2.5			B
3.0	=	fair	C
3.5			C
4.0	=	lowest passing mark	D
5.0	=	fail	F
6.0			

Grading System at Regional Colleges *(Distriktshøgskoler)*

laudabilis prae ceteris	1.0–1.5	=	outstanding	A
laudabilis	1.6–2.5	=	excellent	B
haud illaudabilis	2.6–3.2	=	good	C
non contemnendus	3.3–4.0	=	fair/poor	D

(Fail marks are not recorded)

Grading System at Colleges of Education *(Pedagogiske høgskoler)*

saerdeles godt	4	=	excellent	A
meget godt	3	=	very good	B
godt	2	=	good	C
godkjent	1	=	passed	D

Grading System at Colleges of Nursing *(Sykepleierhøgskoler)*

3.6–4.0	=	particularly satisfactory	A
2.6–3.5	=	very satisfactory	B
1.6–2.5	=	satisfactory	C
0.6–1.5	=	passably satisfactory	D
Below 0.5	=	fail	F

7. Placement Recommendations

7.1. The Role of the National Council on the Evaluation of Foreign Educational Credentials

The placement recommendations that follow have been approved by the National Council on the Evaluation of Foreign Educational Credentials in August 1984. In order that these recommendations may be of maximum use to admissions officers, the following information on the development of the terminology used in stating the recommendations, along with instructions for their use, is offered by the National Council and the World Education Series Committee.

The recommendations deal with all levels of formal education in roughly chronological order up through the highest degree conferred. Recommendations, as developed by the National Council through discussion and consensus, are not directives. Rather, they are general guidelines to help admissions officers determine the admissibility and appropriate level of placement of students from the country under study.

The recommendations should be applied flexibly rather than literally. Before applying the recommendations, admissions officers should read the supporting pages in the text and take into account their own institutional policies and practices. For example, a recommendation may be stated as follows: "May be considered for undergraduate transfer credit of up to 10 semester hours . . ." The implication is that the United States institution may consider giving less than or as much as one year of transfer credit, the decision to be based on various factors—the currentness of the applicant's transfer study, applicability of the study to the United States curriculum, quality of grades, and the receiving institution's own policies regarding transfer credit. Similarly, the recommendation "May be considered for freshman admission . . ." indicates possible eligibility only; it is not a recommendation that the candidate be admitted. Although consideration for admission at the same level may be recommended for holders of two different kinds of diplomas, use of identical phrasing in the recommendation does not mean that the two diplomas are identical in nature, quality, or in the quantity of education they represent.

In most cases, the National Council will not have attempted to make

judgments about the quality of individual schools or types of educational programs within the system under study. Quality clues are provided by the authors and must be inferred from a careful reading of the text.

Certain phrases used repeatedly in the recommendations have acquired, within the National Council's usage, specific meanings. For example, "through a course-by-course analysis" means that in dealing with transfer credit, each course taken at the foreign institution is to be judged on an individual basis for its transferability to the receiving institution. Another phrase "where technical training is considered appropriate preparation" suggests that the curriculum followed by the candidate is specialized, and this wording is often a hint that within the foreign system the candidate's educational placement options are limited to certain curriculums. However, while the National Council is aware of the educational policies of the country under study, its policies are not necessarily set in conformity with that country's policies. Rather, the recommendations reflect United States philosophy and structure of education.

In voting on individual recommendations, National Council decisions are made by simple majority. Although consistency among volumes is sought, some differences in philosophy and practice may occur from volume to volume.

7.2. Placement Recommendations for Selected Educational Credentials—Approved by the National Council on the Evaluation of Foreign Educational Credentials

Credentials	Refer to page:	Entrance eligibility requirement	Length of program
1. *9-årig grunnskole* (9-year compulsory basic school)	5	Constitutional right	9 years
2. *Fagbrev* (craftsman's diploma) from the *yrkesskole* (vocational school)	26	Completion of the 9-year basic school	3–4 years
3. *Vitnemål* (certificate of completion) from an upper-secondary-school vocational program: maritime, domestic science, social services, physical education, industrial, etc.	21	Completion of the 9-year basic school	3 years plus practical work
4. *Tekniker* (technician) from a *teknisk fagskole* (technical-vocational school)	28	Completion of the 9-year basic school and 2 or more years of relevant work experience	2 years
5. *Vitnemål* (certificate of completion) from a secondary-level agricultural school	22	Completion of the 9-year basic school	3 years plus practical work
6. *Vitnemål* with *"bestått", studieretning for allmenne fag* (certificate of completion at "passed" standard of the general area of study, upper-secondary school)	8	Completion of the 9-year basic school	3 years
7. *Vitnemål* with *"bestått", studieretning for handels-og kontorfag* (certificate of completion at "passed" standard of clerical and commercial subjects area of study, upper secondary school)	8	Completion of the 9-year basic school	3 years

Gives access in country to:	Placement recommendation
Upper-secondary school	May be placed in tenth grade.
Employment or technical vocational school after several years of work experience	Primarily a vocational qualification.
Employment or higher-level vocational programs	May be considered for freshman admission where vocational-school background is considered appropriate preparation.
Second year of an engineering college *(ingeniørhøgskole)*	May be considered for freshman admission where vocational-school background is considered appropriate preparation.
Employment or Norwegian agricultural college, after several years of practical work	May be considered for freshman admission where vocational-school background is considered appropriate preparation.
All tertiary programs	May be considered for freshman admission. (See pages 24 and 25 for author's comments.)
All tertiary programs	May be considered for freshman admission.

Credential	Refer to page:	Entrance eligibility requirement	Length of program
8. *Folkehøgskole* (folk high school), certificate of attendance	33	17 years of age	From one week to a year, or more
9. *Ingeniør* (engineer) from an *ingeniørhøgskole* (engineering college)	28	Certificate of completion of general area of study of upper-secondary school	2 years (of engineering technology)
10. *Ingeniør* (engineer) from an *ingeniørhøgskole* (engineering college)	28	Certificate of completion of general area of study of upper-secondary school	3 years (of engineering technology)
11. *Sivilingeniør* (civilian engineer) from the *Norges Tekniske høgskole* (Norwegian Institute of Technology)	30	Certificate of completion, general area of study	4½ years of engineering
12. *Maritim ingeniør* (maritime engineer) from a maritime college	43	Certificate of completion, general area of study	2 years
13. *Sjøkaptein* (sea captain) or *administrasjon* (administration)	43	Maritime engineer degree	1 year
14. One year in a *distriktshøgskole* (regional college)	48	Certificate of completion, general area of study or clerical and commercial subjects area of study	1 year

Gives access in country to:	Placement recommendation
	Admission and placement should not be based on credentials from those schools.
2nd year of the *sivilingeniør* (civilian engineer) program of *Norges Tekniske Høgskole* (NTH)	May be considered for undergraduate admission with up to 2 years transfer credit determined through course-by-course analysis.
3rd year of the *sivilingeniør* (civilian engineer) program of NTH	May be considered for undergraduate admission with up to 3 years transfer credit determined through course-by-course analysis.
Graduate study in science and engineering	May be considered for graduate admission.
A third (administration) year	May be considered for undergraduate admission with up to 2 years transfer credit determined through course-by-course analysis.
Employment	May be considered for undergraduate admission with up to 1 year transfer credit determined through a course-by-course analysis.
Employment or continued study toward a *candidatus magisterii* degree	May be considered for undergraduate admission with up to 1 year transfer credit determined through course-by-course analysis.

Credentials	Refer to page:	Entrance eligibility requirement	Length of program
15. *Høgskolekandidat* (diploma) from a *distriktshøgskole* (regional college)	48	Certificate of completion, general area of study or clerical and commercial subjects area of study	2 years
16. *Høgskolekandidat* (diploma) from a *distriktshøgskole* (regional college)	48	Certificate of completion, general area of study or clerical and commercial subjects area of study	3 years
17. *Sykepleierutdanning* (nursing education, e.g. registered nurse)	51	Certificate of completion, general area of study	3 years
18. *Videreutdanning i sykepleie* (advanced education in nursing)	51	Professional nursing certificate	1 year
19. *Ergoterapeututdanning* (occupational-therapy education)	51	Certificate of completion, general area of study	3 years
20. *Fysioterapeututdanning* (physical-therapy education)	51	Certificate of completion, general area of study	2½ years
21. *Fysiokjemikerutdanning* (laboratory-technician education)	51	Certificate of completion, general area of study	2 years
22. *Protesetekniker utdanning* (prosthesis-technician education)	51	Certificate of completion, general area of study	3 years

Gives access in country to:	Placement recommendation
Employment or continued study toward a *candidatus magisterii* degree	May be considered for undergraduate admission with up to 2 years transfer credit determined through course-by-course analysis.
Employment or continued study toward a *candidatus magisterii* degree	May be considered for undergraduate admission with up to 3 years transfer credit determined through course-by-course analysis.
State board examination in nursing and professional title of registered nurse	May be considered for undergraduate admission with up to 3 years transfer credit determined through course-by-course analysis.
	May be considered for up to 1 year undergraduate transfer credit determined through course-by-course analysis.
	May be considered for undergraduate admission with up to 3 years transfer credit determined through course-by-course analysis.
	May be considered for undergraduate admission with up to 2½ years transfer credit determined through course-by-course analysis.
	May be considered for undergraduate admission with up to 2 years transfer credit determined through course-by-course analysis.
	May be considered for undergraduate admission with up to 3 years transfer credit determined through course-by-course analysis.

Credentials	Refer to page:	Entrance eligibility requirement	Length of program
23. *Radiografutdanning* (x-ray technician education)	51	Certificate of completion, general area of study	3 years
24. *Vernepleierutdanning* (mentally handicapped nursing education)	51	Certificate of completion, general area of study	3 years
25. *Lærer Vitnemål-førskolelærer* (nursery/kindergarten), *allmennlærer* (elementary), *faglærer* (specialized) teacher qualification	52	Certificate of completion, upper-secondary school	3 years
26. *Candidatus agriculturæ* (cand. agr.) (candidate in agriculture)	43	Certificate of completion, general area of study, upper-secondary school	3 years
27. *Candidatus magisterii (cand. mag.)* in education	52	*Lærer Vitnemål* (teacher qualification)	1 year
28. *Siviløkonom* (civilian economist) from *Norges handelshøyskole* (Norwegian School of Economics and Business)	43	Certificate of completion, upper-secondary school	4 years
29. *Siviløkonom med høyere avdelingseksamen (HAE)* (civilian economist) from *Norges handelshøyskole* (Norwegian School of Economics and Business)	43	*Siviløkonom* (civilian economist)	2 years
30. *Licenciate* (degree), *Norges handelshøyskole* (Norwegian School of Economics and Business)	43	*Siviløkonom HAE*	1–1½ years
31. *Diplomøkonom* (diploma in economics) from *Bedriftsøkonomisk Institutt* (Norwegian School of Management)	43	Certificate of completion, upper-secondary school	4 years plus thesis

Gives access in country to:	Placement recommendation
	May be considered for undergraduate admission with up to 3 years transfer credit determined through course-by-course analysis.
	May be considered for undergraduate admission with up to 3 years transfer credit determined through course-by-course analysis.
Additional study at college of education or university	May be considered for undergraduate admission with up to 3 years transfer credit determined through course-by-course analysis.
	May be considered for undergraduate admission with up to 3 years transfer credit determined through course-by-course analysis.
Advanced study at university	May be considered for graduate admission.
Advanced study	May be considered for graduate admission.
Licenciate	May be considered to have a degree comparable to a U.S. master's degree.
	May be considered to have completed a level of education beyond the U.S. master's degree.
Advanced study	May be considered for graduate admission.

Credentials	Refer to page:	Entrance eligibility requirement	Length of program
32. *Registrert revisor* (registered accountant) from *Bedrifts-økonomisk Institutt* (Norwegian School of Management, Oslo)	43	Certificate of completion, upper-secondary school	3 years plus 2 years practical work
33. *Bedriftsøkonom* (business economist) from *Bedrifts-økonomisk Institutt* (Norwegian School of Management, Oslo)	43	Certificate of completion, upper-secondary school or relevant work experience	1 year full time or 2 years part time
34. *Handelsøkonom* (commercial economist) from *Handels-akademiet* (College of Business Administration)	43	Certificate of completion, upper-secondary school	3 years (discontinued program)
35. *Handelsøkonom* (commercial economist) from *Handels-akademiet* (College of Business Administration)	43	Certificate of completion, upper-secondary school	4 years (beginnning 1984)
36. *Vitnemål* (certificate) from *Stiftelsen Markedsføringsskolen* (School of Marketing)	43	Certificate of completion, upper-secondary school	1 year full time or 2 years part time
37. *Examen philosophicum* (general examination)	36	Certificate of completion, upper-secondary school	½ year
38. *Candidatus magisterii (cand. mag.)* (candidate of masters) first university degree	35	Certificate of completion, upper-secondary school	3½–4 years
39. *Candidatus juris* (cand. jur.) (candidate in law)	35	Certificate of completion, upper-secondary school	5–6 years
40. *Candidatus oeconomiae (cand. oecon.)* (candidate in economics)	34	*Candidatus magisterii*	1½–2 years

Gives access in country to:	Placement recommendation
	May be considered for undergraduate admission with up to 3 years transfer credit determined through course-by-course analysis.
	May be considered for undergraduate admission with up to 1 year transfer credit determined through course-by-course analysis.
Advanced study	May be considered for undergraduate admission with up to 3 years transfer credit determined through course-by-course analysis.
Employment or advanced study	May be considered for graduate admission.
	May be considered for undergraduate admission with up to 1 year transfer credit determined through course-by-course analysis.
	May be considered for undergraduate transfer credit of up to 10 semester hours determined through course-by-course analysis.
Graduate study	May be considered for graduate admission.
Advanced university study	May be considered to have a first professional degree in law; may be considered for graduate admission.
Advanced university study	May be considered to have a degree comparable to a U.S. master's degree.

Credentials	Refer to page:	Entrance eligibility requirement	Length of program
41. *Candidatus philologiae (cand. philol.)* (candidate in philosophy)	35	*Candidatus magisterii*	2 years
42. *Candidatus pædagogia (cand. pæd.)* (candidate in pedagogy)	35	*Candidatus magisterii*	3 years
43. *Candidatus politicarum (cand. polit.)* (candidate in political science)	35	*Candidatus magisterii*	2 years
44. *Candidatus psychologiae (cand. psychol.)* (candidate in psychology)	35	*Candidatus magisterii*	2½–3 years
45. *Candidatus realium (cand. real.)* (candidate in sciences)	35	*Candidatus magisterii*	1½–2 years
46. *Candidatus scientiarum (cand. scient.)* (candidate in sciences)	35	*Candidatus magisterii*	1½–2 years
47. *Candidatus sociologiae (cand. sociol)* (candidate in sociology)	35	*Candidatus magisterii*	2 years
48. *Magister artium (mag. art.)* (master of arts)	35	*Candidatus magisterii*	2–3 years
49. *Licentiate* (a higher degree in specialized subjects, e.g., economics)	44	*Candidatus magisterii* *siviløkonom HAE*	1–3 years 1–2 years

Gives access in country to:	Placement recommendation
Advanced university study	May be considered to have a degree comparable to a U.S. master's degree.
Advanced university study	May be considered to have a degree comparable to a U.S. master's degree.
Advanced university study	May be considered to have a degree comparable to a U.S. master's degree.
Advanced university study	May be considered to have a degree comparable to a U.S. master's degree.
Advanced university study	May be considered to have a degree comparable to a U.S. master's degree.
Advanced university study	May be considered to have a degree comparable to a U.S. master's degree.
Advanced university study	May be considered to have a degree comparable to a U.S. master's degree.
Advanced university study	May be considered to have a degree comparable to a U.S. master's degree.
Advanced university study	May be considered for graduate transfer credit determined through course-by-course analysis.

Note: The National Council chose not to prepare recommendations for the *grunnfag, mellomfag, storfag, hovedfag,* and *semesteremne*. See pages 36 and 37 for descriptions.

Glossary

Italicized words in the left column are Latin terms. The Norwegian alphabet contains three more letters than the English (Æ, Ø, and Å) and are usually found in Norwegian alphabet listings after the letter Z. For easier reference, words in this glossary that begin with the Å and Ø are found under A and O respectively.

Adjunkt	a teaching title at the *candidatus magisterii (cand. mag.)* level
Agronom	the second-year course of the agricultural secondary school
Akademi	institutions of higher learning
Aktiviteter	textile handicraft
Allmennlærer	a teacher qualified to teach basic school
År	year
Årig	year
Arkitektur	architecture
Avdeling	department
Avhandling	thesis
Bedriftsøkonomi	business economics
Bestått	passed
Biokjemi	biochemistry
Candidatus	candidate
Candidatus agriculturæ (cand. agric.)	three-year degree in agriculture
Candidatus magisterii (cand. mag.)	the first university degree, awarded after three-and-one-half or four years beyond the secondary-school certificate of completion
Candidatus oeconomiae (cand. oecon.)	a degree in economics that requires one-and-one-half to two years of study beyond the *cand. mag.*
Candidatus pædagogia (cand. pæd.)	a degree in education that requires three years of study beyond the *cand. mag.*
Candidatus philologiae (cand. philol.)	a degree in philosophy that requires two years of study beyond the *cand. mag.*

Candidatus politicarum (cand. polit.)	a degree in political science that requires two years of study beyond the *cand. mag.*
Candidatus psychologiae (cand. psychol.)	a degree in psychology that requires two-and-one-half to three years of study beyond the *cand. mag.*
Candidatus realium (cand. real.)	a degree in science that requires one-and-one-half to two years of study beyond the *cand. mag.*
Candidatus scientiarium (cand. scient.)	a degree in science that requires one-and-one-half to two years of study beyond the *cand. mag.*
Candidatus sociologiae (cand. sociol.)	a degree in sociology that requires two years of study beyond the *cand. mag.*
Dager	days
Deltatt	student attended class, but was not given a grade
Det regionale høgskolesystem	the regional-college system
Distriktshøgskoler	regional colleges
Doktorgrad	doctorate degree
Eksamen	examination
Eksamenskarakter	marks based on examinations
Embetseksamen	official examination
Engelsk	English
Enkelttimer	single periods
Ergoterapeututdanning	occupational-therapist education
Ettårsenhet	one-year course
Examen artium	secondary-school examination and leaving certificate (discontinued in 1982)
Examen philosophicum	a university examination in philosophy, logic, and psychology
Fag	subjects
Fagbrev	craftsman's diploma (secondary-vocational-school level)
Faglærer	a teacher certified to teach basic school, upper-secondary school, and specialized subjects
Felles allmenne fag	common core subjects
Filosofi	philosophy
Finsk	Finnish
Fiskerikandidat	degree in fishery

Folkehøgskolen	folk high school
Forkurs	preparatory courses
Fødselsnummer	birthdate
Førskolelærer	pre-school and kindergarten teacher
Fransk	French
Fravær	absences
Fremmedspråk	foreign language
Fullført	completed
Fysikk	physics
Fysiokjemikerutdanning	laboratory-technician education
Fysioterapeututdanning	physical-therapist education
Godkjent	passed
Godt	a grade of "good"
Gresk	Greek
Grunnfag	an examination given after two semesters of university work
Grunnkurs	foundation course
Grunnskole	compulsory school (usually refers to 9-year basic school)
Gymnas	former name given to academic-secondary schools
Halvårsenhet	a one-semester course
Handelshøgskole	a school of business education
Haud illaudabilis	a grade of "good"
Helsefaghøgskole	a health-education college
Historie	history
Høgskolekandidat	college graduate (diploma holder)
Hovedfag	an examination following four or five semesters beyond the *mellomfag*.
Hovedmål	main
Hovedoppgave	major research paper
Høy	high
Idrett	sports
Ikke tilfredsstillende (Ik. tf.)	a grade of "fail"
Immatrikulering	matriculation
Ingeniør	engineer
Ingeniørhøgskole	a college of engineering
Jordbruk	agriculture
Karakterer	marks
Kjemi	chemistry
Kombinert	combined

Kommunikasjon	communication
Kostnads-og inntektsanalyse	costs-benefits analysis
Kroppsøving	physical education
Lærer	a teacher who has completed a three-year course at a college of education
Lærerhøgskole	a college of education
Lærlingskole	an apprentice school
Laudabilis	a grade of "very good"
Laudabilis prae ceteris	a grade of "excellent"
Lektor	teacher in upper-secondary school
Licentiate	a graduate-level degree
Lisensiatgrad	a holder of a particular graduate-level degree
Linjefag	branch subjects
Magisterii artium (mag. art.)	a university degree awarded after two years of study beyond the *cand. mag.* (More specialized than the *cand. philol., cand. real.* etc.)
Magistergrad	a holder of a master's degree
Maritime høgskole	a college of maritime studies [formerly known as *sjømannskole* (nautical school) and *maskinistskole* (machinist school)]
Markedsføring	marketing
Maskinskriving	machine writing (typing)
Måtelig	a grade of "poor"
Matematikk	mathematics
Meget tilfredsstillende (m. tf.)	a grade of "very good"
Mellomfag	a university examination given after three semesters of work; may include a *grunnfag*
Merknader	comments
Muntlig	oral
Musikkteoretisk	music theory
Naturfag	natural science
Noenlunde tilfredsstillende (ng. tf.)	a grade of "fair"
Non contemnendus	a grade of "fair/poor"
Norge-Amerika Foreningen	Norway-American Association
Norrønt mål/Islandsk	Old Norwegian/Icelandic language
Norsk	Norwegian
Oeconomiæ	economics
Økonomi	economics

Pedagogisk høgskole	a college of education
Praksis	practical
Praksisopplæring	practical education
Programmering lavnivåspråk	assembly programming
Protesetekni kerutdanning	prosthetist education
Psykologi	psychology
Radiografutdanning	x-ray technician education
Regnskap	accountancy
Rettslære	law
Særdeles tilfredsstillende (s. tf.)	a grade of "excellent"
Saksbehandling	public administration
Samfunnsfag (samf. fag.)	social studies
Samisk	Lappish
Samtidsorientering	Society today
Semesteremne	a one-semester course that follows a *grunnfag* or a *mellomfag*
Sivilingeniør	civilian engineer, a four-and-one-half-year engineering degree
Siviløkonom	civilian economist, a four-year degree in economics and business administration
Sjø	sea
Sjømannskole	a college of maritime studies, also called a *maritime høgskole*
Skatterett	tax legislation
Skriftlig	written
Sommerkurs	summer course
Sosialøkonom	economics as a social science
Spesialoppgave	special written assignments
Språk	language
Språkkunnskap	linguistics
Standpunktkarakter	grades based on classroom achievement
Statens Lånekasse for Utdanning	State Educational Loan Fund
Storfag	an examination given after one semester beyond the *mellomfag*
Studieretning for allmenne fag	general area of study
Studieretning for handels-og kontorfag	clerical and commercial subjects area of study
Sykepleierske	nurse
Sykepleierutdanning	nursing education

Systemering	systems development
Tekniker	technician
Teknisk fagskole	technical-vocational school (secondary level)
Teknisk høgskole	university-level technical education
Tekstbehandling	electronic word processing
Tilfredsstillende (tf.)	a grade of "good"
Timetall	number of periods
Tysk	German
Uketimer	weekly periods
Valgfag	optional subjects
Vekttall	credits awarded at the higher-education level
Vernepleierutdanning	mentally handicapped nursing education
Videregående kurs	advanced course
Videregående skole	upper-secondary school
Videreutdanning i sykepleie	advanced nursing course
Vitnemål	certificate
Yrkesskole	vocational school (secondary level)

Appendixes

A. A Partial list of Tertiary Institutions in Norway

B. Significant Contacts in Norway

C. Offices that Assist Norwegian Students Who Study in Foreign Lands

D. Bibliography

E. Members of National Council on the Evaluation of Foreign Educational Credentials

APPENDIX A. A Partial List of Tertiary Institutions in Norway*

1. Universities *(Universiteter)*

Universitetet i Bergen (University of Bergen)
Universitetet i Oslo (University of Oslo)
Universitetet i Tromsø (University of Tromsø)
Universitetet i Trondheim (University of Trondheim)

2. Regional Colleges *(Distriktshøgskoler)*

Agder Distriktshøgskole (Agder Regional College)
Alta Distriktshøgskole (Alta Regional College)
Hedmark Distriktshøgskole (Hedmark Regional College)
Møre og Romsdal Distriktshøgskole, Molde (Møre og Romsdal Regional College, Molde)
Møre og Romsdal Distriktshøgskole, Volda (Møre og Romsdal Regional College, Volda)
Nordland Distriktshøgskole (Nordland Regional College)
Nord-Trøndelag Distriktshøgskole (Nord-Trøndelag Regional College)
Oppland Distriktshøgskole (Oppland Regional College)
Rogaland Distriktshøgskole (Rogaland Regional College)
Sogndal Distriktshøgskole (Sogndal Regional College)
Trondheim Økonomiske Høgskole (Trondheim Economic College)
Telemark Distriktshøgskole (Telemark Regional College)
Økonomisk Distriktshøgskole (College of Business and Economics, Oslo, also listed under Business Schools)
Østfold Distriktshøgskole (Østfold Regional College)

3. Colleges of Engineering *(Ingeniørhøgskoler)*

Agder Ingeniør-og Distriktshøgskole (Agder Regional College of Engineering)
Bergen Ingeniørhøgskole (Bergen College of Engineering)
Gjøvik Ingeniørhøgskole (Gjøvik College of Engineering)
Hærens Ingeniørhøgskole (Hærens College of Engineering)
Horten Ingeniørhøgskole (Horten College of Engineering)
Kongsberg Ingeniørhøgskole (Kongsberg College of Engineering)
Møre og Romsdal Ingeniørhøgskole (Møre og Romsdal College of Engineering)
Narvik Ingeniørhøgskole (Narvik College of Engineering)
Norsk Korrespondanse Institutt's (NKI's) Tekniske Ingeniørhøgskole (NKI Technical School's College of Engineering)

* This list was drawn from several references. Translations from Norwegian to English varied among the references and some inconsistency in terms and spelling may occur on educational documents, whether they are in Norwegian or English. Also, proper names and/or addresses/translations for some institutions could not be found and are thus omitted.

Oslo Ingeniørhøgskole (Oslo College of Engineering)
Rogaland Ingeniør-og Distriktshøgskole (Rogaland Regional College of Engineering)
Stavanger Ingeniørhøgskole (Stavanger College of Engineering)
Telemark Ingeniørhøgskole (Telemark College of Engineering)
Televerket (Norwegian Telecommunication Company)
Trondheim Ingeniørhøgskole (Trondheim College of Engineering)
Østfold Ingeniørhøgskole (Østfold College of Engineering)

4. Business Schools

Bedriftsøkonomisk Institutt (Norwegian School of Management, Oslo)
Handelsakademiet (College of Business Administration, Oslo)
Norges Handelshøyskole (Norwegian School of Economics and Business Administration, Bergen)
Stiftelsen Markedsføringsskolen (School of Marketing, Oslo)
Økonomisk College (College of Business and Economics, Oslo)

5. Colleges of Education *(Pedagogiske Høgskoler)*

5.1 Standard Programs

Alta Lærerhøgskole (Alta College of Education)
Bergen Lærerhøgskole (Bergen College of Education)
Bodø Lærerhøgskole (Bodø College of Education)
Eik Lærerhøgskole (Eik College of Education)
Elverum Lærerhøgskole (Elverum College of Education)
Halden Lærerhøgskole (Halden College of Education)
Hamar Lærerhøgskole (Hamar College of Education)
Kristiansand Lærerhøgskole (Kristiansand College of Education)
Levanger Lærerhøgskole (Levanger College of Education)
Nesna Lærerhøgskole (Nesna College of Education)
Telemark Lærerhøgskole (Telemark College of Education)
Oslo Lærerhøgskole (Oslo College of Education)
Sagene Lærerhøgskole (Sagene College of Education)
Sogndal Lærerhøgskole (Sogndal College of Education)
Stavanger Lærerhøgskole (Stavanger College of Education)
Stord Lærerhøgskole (Stord College of Education)
Tromsø Lærerhøgskole (Tromsø College of Education)
Trondheim Lærerhøgskole (Trondheim College of Education)
Volda Lærerhøgskole (Volda College of Education)

5.2 Specialized Programs

Barnevernsakademiet i Oslo (College of Early Childhood Education, Oslo)
Dronning Mauds Minne, Høgskole for Førskolelærerutdanning (Queen Maud's Memorial Foundation College of Education for Pre-School Teachers)
Pedagogisk Seminar i Oslo (Postgraduate Institute for the Training of Secondary School Teachers)
Statens Husstellærerhøgskole (National College for Teachers of Domestic Science)
Statens Lærerhøgskole i Forming Blaker (National College for Teachers of Arts and Crafts, Blaker)
Statens Lærerhøgskole i Forming Oslo (National College for Teachers of Arts and Crafts, Oslo)
Statens Lærerhøgskole i Handels og Kontorfag (National College for Teachers of Commercial Subjects)
Statens Yrkespedagogiske Høgskole (National College for Teachers of Vocational Subjects)

6. Specialized Colleges for Health-Related Fields

Ergoterapihøgskolen i Oslo (College of Occupational Therapy, Oslo)
Ergoterapihøgskolen i Trondheim (College of Occupational Therapy, Trondheim)
Norges Idrettshøgskole (Norwegian College of Physical Education and Sport)
Norges Sykepleierhøgskole (Norwegian College of Nursing)
Radiografskole (College of Radiography)
Statens Fysiokjemikerskole (National College for Medical Laboratory Technologists)
Fysioterapihøgskolen i Bergen (National College of Physiotherapy, Bergen)
Fysioterapihøgskolen i Oslo (National College of Physiotherapy, Oslo)
Statens Helsesøsterskole i Tromsø (National College of Nursing, Tromsø)
Statens Helsesøsterskole i Trondheim (National College of Nursing, Trondheim)
Statens Jordmorskole (National College of Midwifery)
Statens Mensendieck Skole (National Mensendieck College)
Statens Skole for Proteseteknikk (National College of Prosthetics)
Statens Spesialskole i Psykiatrisk Sykepleie (National Special College of Psychiatric Nursing)
Sykepleierlærerutdanningen ved Universitetet i Tromsø (School for Teachers of Nursing at the University of Tromsø)
Statens Sykepleierskole (National College of Nursing)
Statens Utdanningssenter for Helsepersonell (National Postgraduate Training Center for Health Personnel)

7. Colleges of Maritime Studies *(Maritime Høgskoler)*

Agder Maritime Høgskole (Agder College of Maritime Studies)
Bergen Maskinistskole (Bergen College of Nautical Engineering)
Bergen Sjømannsskole (Bergen College of Maritime Studies)
Haugesund Maritime Høgskole (Haugesund College of Maritime Studies)
Oslo Sjømannsskole (Oslo College of Maritime Studies)
Oslo Teknisk Maritime Skole (Oslo College of Technical Maritime Studies)
Tromsø Maritime Skole (Tromsø College of Maritime Studies)
Trondheim Maritime Skoler (Trondheim Colleges of Maritime Studies)
Tønsberg Maritime Høgskole (Tønsberg College of Maritime Studies)

8. Fine and Performing Arts Schools

Bergen Kunsthåndverksskole (Bergen College of Art, Crafts, and Design)
Bergen Musikkonservatorium (Bergen Conservatory of Music)
Nordnorsk Musikkonservatorium (North Norwegian Conservatory of Music)
Norges Musikkhøgskole (Norwegian College of Music)
Statens Balletthøgskole (National College of Ballet)
Statens Håndverks-og Kunstindustriskole (National College of Art, Crafts, and Design)
Statens Kunstakademi (National Academy of Fine Arts)
Statens Operaskole (National College of Operatic Art)
Statens Teaterskole (National College of Dramatic Arts)
Vestlandets Kunstakademi (National Academy of Fine Arts)

9. Colleges of Social Work *(Sosialhøgskoler)*

Norges Kommunal-og Sosialhøgskole (Norwegian State College of Public Administration and Social Work)
Sosialhøgskolen, Bærum (College of Social Work, Bærum)
Sosialhøgskolen, Stavanger (College of Social Work, Stavanger)
Sosialhøgskolen, Trondheim (College of Social Work, Trondheim)

10. Other Specialized Tertiary Institutions

Arkitekthøgskolen i Oslo (College of Architecture, Oslo)
Norges Fiskerihøgskole (Norwegian College of Fishery Science)
Norges Landbrukshøgskole (Norwegian College of Agriculture)
Norges Veterinærhøgskole (Norwegian Veterinary College)
Norsk Journalisthøgskole (Norwegian College of Journalism)
Statens Bibliotekhøgskole (National College of Library and Information Science)
Statens Reseptarhøgskole (National College of Dispensers)

APPENDIX B. Significant Contacts in Norway

Many people shared their valuable time and knowledge during the fact-gathering segment of the assignment. Below are listed most of those who assisted with the project. The authors apologize for omissions and for any misspelled names or inappropriate titles.

Agder Regional College, Kristiansand
- Robert L. Amundsen, Deputy Chairman, Translation Department
- Finn Holmer Hoven, President
- Per Iversen, Director of Studies
- Kjell R. Krumm, Chairman, Economics and Business Administration
- Sissel Rike, Information Secretary

Association of Norwegian Students Abroad (ANSA)
- Harald Bruno Ciarlo, Educational Attaché, Europe
- Hege Elisabeth Danielsen, Information Secretary
- Helge O. Jakobsen, President
- Haken R. Nilson
- Espen Ødegård, Educational Attaché
- Ivar Refsland, Secretary General

Bergen College of Education
- Ivar Drevland, Principal
- Svein Hetland
- Kjell Nesse

College of Business Administration, Oslo
- Anne Valera Diesen, Assistant Dean
- Ingar F. Lae, Board Member
- Torgeir Røst, Dean

Ministry of Agriculture
- Hans Henrik Isene, Senior Executive Officer

Ministry of Church and Education
- Tobias Brodtkorb, Senior Executive Officer
- Jon Chr. Løken, Deputy Director General, Department of Upper-Secondary Schools
- Tomas Øvergaard, Senior Executive Officer

Ministry of Cultural and Scientific Affairs
- Brit Alstad, Executive Officer, International Division
- Ingrid Tvedt Evensen, Head of Division for Colleges of Health Education
- Gunnar Hals, Executive Officer, Division for Regional Colleges
- Arve Kjelberg, Assistant Director General, Department of Higher Education
- Gudbrand Kvaal, Executive Officer
- Per Nyborg, Director General, Administrative Department
- Olav Nyhamar, Head of International Division
- Kari Østvedt, Head of Division for Regional Colleges

National Council for Upper-Secondary Education
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Lars Ulsnes, Senior Executive Officer
Torstein Ness, Senior Executive Officer
Marit Oppedal, Senior Executive Officer

Norway-America Association
J. C. Kongsli, Chairman of the Board
Kjell A. Nielsen, Chairman of the Scholarship Committee
Ragnhild Galtung, Director

Norwegian Institute of Technology (NTH), Trondheim
Kjell Carlsen, Director of Studies
Arne Rønning, Assistant Director of Studies

Norwegian School of Economics and Business Administration, Bergen
John A. Andersen
Kurt Petersen

Norwegian School of Management
Svein Lindbak, Assistant to the Dean
Bjørn Skyberg, Information Manager

Norwegian State Educational Loan Fund
Karin Holst, Student Counselor
Jan Erik Wold, Head of Department

Oslo College of Business and Economics
Johannes Øvereng, Principal

Oslo College of Engineering

Sofienberg Technical School
Gunnar Strømsnes, Principal

Ulsrud Upper-Secondary School, Oslo
Odd Kollerud, Principal

United States Education Foundation
Donna Lae, Counselor
Barbara Lysholt Petersen, Executive Director

United States Embassy in Oslo
Gary Morley, Public Affairs Officer

University of Oslo
Bjørn Bjørnsen, Faculty of Mathematics and Natural Sciences
Kirsti Harg, Central Division of Studies
Sigrid Holterman, Chief of Central Division of Studies
Lise Holm, Director, Information Department
Jostein Løfsgaard, Assistant University Director
Anders Lyse, Chairman, National Admissions Committee
Jean Nesland Olsen, Office of Foreign Students
Olav M. Trovik, University Director

APPENDIX B. Significant Contacts in Norway (continued)

University of Trondheim, College of Arts and Sciences
Per Kjøl, Secretary, Admissions Committee
Ida Yttri, Administrative Officer

Others
Øivind Heier, Former Educational Attaché for North America (ANSA-New York)
Jan Høivik, Former Educational Attaché for North America (ANSA-New York)

APPENDIX C. Offices that Serve Norwegian Students Who Study in Foreign Lands

1. Association of Norwegian Students Abroad (ANSA)

ANSA was founded in 1956 for the purpose of maintaining and improving the educational, social, economic, and cultural needs of the nearly 4,500 Norwegian students who study abroad. ANSA represents students at nearly 300 educational institutions on five continents. The main office is in Oslo, where a staff administers and coordinates the organization's activities and services. ANSA is financed mainly by the Norwegian government. Both ANSA's office in Oslo and the Norwegian Information Service in North America may be of assistance to institutions wishing further information on the educational background of students from Norway. The Oslo address is ANSA, Storgt 3, Oslo 1, Norway. The address in the United States is Norwegian Information Service, 825 Third Avenue, New York, New York 10022. Telephone (212) 421-7333.

2. The State Educational Loan Fund (Statens Lånekasse for Utdanning)

The State Educational Loan Fund was established by the government Act of 1947 and was greatly extended by the subsequent Act of 1969. These acts have contributed to eliminating the inequality of educational opportunity that was based on geographic, social, and economic factors. The Loan Fund is operated by the government through the Ministry of Cultural and Scientific Affairs for the benefit of students pursuing full-time studies in Norway and abroad. In addition to providing low-interest loans, the State Educational Loan Fund administers state stipends (grants), which do not have to be repaid. It may provide loans and grants to pursue an education abroad when the entry to the corresponding education in Norway is limited and there is a reasonable demand for those with such training in Norway. Students who receive these loans must pursue a full-time course of study for a minimum of one year. Depending on the cost and type of the educational program, the student may have up to 20 years to repay a loan by installments. Detailed questions should be addressed to: The State Educational Loan Fund, Økernveien 145, Oslo 5, Norway.

3. The Norway-America Association (Norge-Amerika Foreningen)

The Norway-America Association, founded in 1919, is a nonprofit organization supported solely by private Norwegian contributions from individuals and firms. One of its objectives is to "promote cultural and practical cooperation between Norway on the one side and the United States and Canada on the other side."

The objective is fulfilled by meetings, films, exhibitions on Norwegian-American themes, and by acting as an information center on study possibilities and

assistance to Norwegian and American students. Scholarships are awarded to Norwegians and North Americans for study on each side of the Atlantic.

The association prepares many documents for Norwegian students which provide basic information about studies in America. Over 1,000 university catalogs are available in its Oslo library for students seeking information.

The association has been involved in coordinating special study programs both in America and Norway. Schools or individuals wishing to discuss a program needing a cooperative effort in Norway or a scholarship program are encouraged to contact: The Director, The Norway-America Association, Drammensveien 20C, Oslo 2, Norway.

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The State Budget: 1985. Oslo: The Government of the Kingdom of Norway, October 1984.

APPENDIX E. National Council on The Evaluation of Foreign Educational Credentials: Members

Chairperson: Karlene Dickey, Associate Dean of Graduate Studies and Research
Stanford University, Stanford, California 94305

Vice Chairperson and Secretary: Stan Berry, Director of Admissions
Washington State University, Pullman, Washington 99163

Member Organizations and Their Representatives

AACJC	Phillip J. Gannon President Lansing Community College Lansing, Michigan 48901
AACRAO	G. James Haas Associate Director of Admissions Indiana University Bloomington, Indiana 47405
CGS	Andrew J. Hein Assistant Dean The Graduate School University of Minnesota Minneapolis, Minnesota 55455
NAFSA	David Horner Director Office of International Students and Scholars 109 Center for International Studies Michigan State University East Lansing, Michigan 48824
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AACRAO	Alan Margolis Registrar Queens College Flushing, New York 11367 (Also, Chairperson, WES Committee)

APPENDIX E. National Council on the Evaluation of Foreign Educational Credentials (continued)

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AID	Hattie Jarmon Education Specialist Office of International Training Department of State/AID Washington, D.C. 20523
IIE	Martha Renaud Director Placement and Special Services Division Institute of International Education 809 United Nations Plaza New York, New York 10017
ACE	Joan Schwartz Senior Program Associate Office on Educational Credit and Credentials American Council on Education One Dupont Circle Washington, D.C. 20036
NAFSA	Joann Stedman Director Foreign Student Services Columbia University Broadway and 116 Street New York, New York 10027
AACRAO	Kitty Villa Acting Director International Office University of Texas Drawer A, U.T. Station Austin, Texas 78712
NAFSA	Valerie Woolston Director International Education Services University of Maryland North Administration Building College Park, Maryland 20742

APPENDIX E. National Council on the Evaluation of Foreign Educational Credentials (continued)

Observer Organizations and Their Representatives

USIA

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